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Townsend, Charles Haskins
Conditions of seal life
on the rookeries of the
Pribliof Islands 1893-1895

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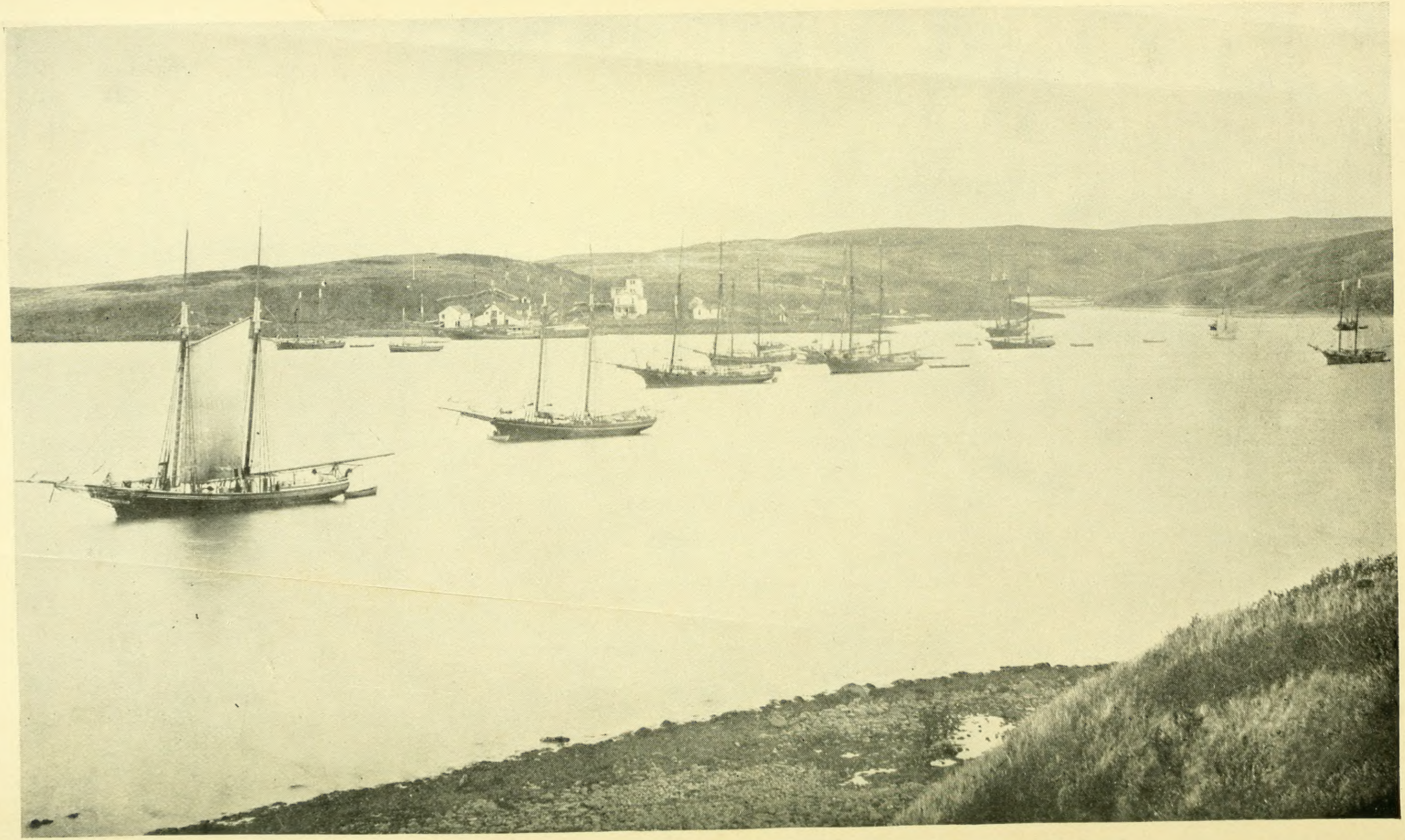

A PORTION OF THE PELAGIC SEALING FLEET AT SAND POINT, SHUMAGIN ISLANDS, JUNE, 1893.

CONDITION OF SEAL LIFE ON THE ROOKERIES OF THE PRIBILOF ISLANDS, 1893-1895.

By C. H. TOWNSEND.

THE ROOKERIES IN 1893.

LETTER OF TRANSMITTAL.

WASHINGTON, D. C., *February 26, 1894.*

SIR: I have the honor to inform you that during the summer of 1893 an inquiry was conducted on the Pribilof Islands by the United States Fish Commission, in compliance with the following clause contained in the sundry civil appropriation bill for the fiscal year ending June 30, 1894, namely:

> And the Commissioner of Fisheries is authorized and required to investigate, under the direction of the Secretary of the Treasury, and when so directed to report annually to him regarding the condition of seal life upon the rookeries of the Pribilof Islands.

The report upon this investigation by the naturalist of the Fish Commission steamer *Albatross*, Mr. C. H. Townsend, by whom it was conducted, is herewith respectfully transmitted, in accordance with your direction.

Very respectfully,

M. MCDONALD,
Commissioner.

Hon. JOHN G. CARLISLE,
Secretary of the Treasury, Washington, D. C.

INTRODUCTION.

The report herewith submitted is based chiefly upon the observations made on St. Paul and St. George islands between July 11 and August 18, 1893, in conformity with the instructions issued for my guidance, and with the object of determining the conditions of seal life upon the rookeries of the Pribilof Islands during that period, as compared with the corresponding period of the previous year. It is accompanied by 11 charts and 46 photographic views (105 plates),[1] corresponding mainly with those made in 1892 by Mr. J. Stanley-Brown, special Treasury agent, and forming part of his report to the Secretary of the Treasury. Views were obtained from all of the photographic stations occupied by Mr. Stanley-Brown, but as the photographer of the Fish Commission steamer *Albatross* likewise secured several excellent negatives of some of the rookeries from other good positions in 1892, I considered it important to duplicate them also, and prints from these negatives of both years have been included among the photographs transmitted. From the appended catalogue of photographs, giving the dates upon which the negatives were made in each year, it will be seen that, with one exception, corresponding negatives were taken on the same or very nearly the same date, foggy weather sometimes interfering with the work, but not sufficiently to allow of any material change in the condition of the rookeries. The exception was at Northeast Point rookery, on St. Paul Island, which the writer was unable to reach until the seals had spread slightly. The difference in perspective observable in the photographs of the two years is owing to the fact that the photographic lens used in 1893 had a somewhat different angle from the one employed by Mr. J. Stanley-Brown.

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[1] This set of charts and photographs not transmitted for publication, the accompanying series for 1895, showing more reduced condition of rookeries, being deemed sufficient.

In comparing the corresponding photographs for the two years, it will be observed that only a few of them show any appreciable differences in the abundance of the seals upon the rookeries to which they relate; but my personal observations clearly demonstrate that a moderate decrease in the number of seals and slight changes in their distribution did occur between the summer of 1892 and that of 1893, as described below, these facts being also more plainly brought out by a comparison of the charts.

In this connection, it seems proper to explain that my acquaintance with the seal rookeries of the Pribilof Islands has not been limited to the investigation of last summer. I first visited these islands during June and September, 1885, at which time the rookeries were in their prime, pelagic sealing, just then beginning, having produced scarcely any effect upon the islands. Compared with the vast herds then observed, the body of seals now on the rookeries appears as a mere remnant. As the naturalist of the steamer *Albatross*, I also made observations on these islands from July 28 to August 10, 1891, and again between June 30 and August 14, 1892, during a part of this latter period having been temporarily attached to the revenue-steamer *Corwin*, then engaged in following the breeding female seals out to their feeding grounds, on which, up to distances of 200 miles from the islands, specimens obtained by means of firearms were found to be in milk and to have undigested food in their stomachs.

Recognizing the importance of designating the photographic stations previously referred to, so that they may be found without delay in future years, I have marked many of those located near permanent rocks or bowlders with their numbers in white lead, and I would respectfully suggest that this work be completed next season. The rookeries at which the stations have been so designated are Great East, Little East, North and Starry Arteel, on St. George Island; and Reef and Zapadnie, on St. Paul Island.

ITINERARY FOR THE SEASON.

Accompanied by Mr. N. B. Miller, photographic assistant, I was landed on St. George Island by the steamer *Albatross* on the morning of July 11, and remained there until the 15th. Zapadnie rookery was photographed on the 13th; North rookery in the morning and Starry Arteel rookery in the afternoon of the 14th; the East and Little East rookeries during the morning of the 15th. The areas covered by the seals at each of these rookeries were plotted upon the charts on the same dates.

We took up our quarters on St. Paul Island on July 16, and on the 17th attempted to photograph the rookery at Northeast Point, but a dense fog prevented. Later in the day, however, we succeeded in photographing Ketavie and Lukannon rookeries. During the 18th, 19th, 20th, and 21st, work was entirely interrupted by fog. The 22d proved clear, and permitted us to obtain plates of Reef rookery in the morning, and of Tolstoi and Zapadnie rookeries in the afternoon. A dense fog continued from the 23d to the 25th inclusive, followed by clear weather on the 26th, when we visited and photographed Northeast Point rookery, the writer remaining there overnight to complete his observations. Polavina rookery was photographed in the afternoon of the 28th, and on the 29th observations were made at Tolstoi and Reef rookeries.

A severe storm prevailed during the 30th, and on the following day I visited that part of Reef rookery lying under the cliffs for the purpose of ascertaining to what extent young pups may have been destroyed by it, but I found the damage slight. In the afternoon I visited Zapadnie rookery, and Mr. Miller returned on board the *Albatross*.

On August 1 photographs were obtained of Lagoon rookery and of Reef rookery from Village Hill. The 2d and 3d were spent in making general observations; from the 4th to the 7th fogs and storms prevailed; on the 8th visits were paid to Lukannon and Ketavie rookeries, and to the rookery on Sea Lion Rock. On the 9th I secured photographs of Northeast Point rookery from Hutchinson Hill, but the weather was rainy or foggy from the 10th to the 13th, permitting only of brief examinations being made of Reef and Ketavie rookeries. August 14 I visited Tolstoi rookery and found several hundred dead seal pups, nine-tenths of which had undoubtedly been killed under the cliffs during the recent storm. Their bodies were lying just along the line of debris left by the highest wash of the waves, and as they were mostly near the commencement of the sand beach, they had evidently been swept from the narrow rookery at the foot of the cliff extending out to the point.

On August 16 I was again transferred to St. George Island, where I spent that and the two following days in reexamining the several rookeries. They were all well covered by the spreading out of the seals which takes place in August, and makes the rookeries look larger than in July. A large proportion of the young pups were also swimming about the adjacent kelp beds off Little East rookery. In the afternoon of the 18th I rejoined the *Albatross*.

CONDITION OF THE ROOKERIES.

ST. PAUL ISLAND.

Northeast Point rookery.—The seals along the eastern side of this rookery were found distributed as in 1892, but undoubtedly much more thinly in the immediate vicinity of the point. Along the western side they were hauled out a little farther back, owing perhaps to the later date at which the observations were made. One or two breaks in the beach line had closed since the preceding season, but no increase can be noted on account of the thinning at the point. It is, therefore, probable that no appreciable change has taken place in the total number of seals on the rookery since 1892. No seals whatever from this rookery have been killed for several seasons. Photographed July 26 and August 9.

Polavina rookery shows a decrease in seals, although the usual area is occupied. It will be noticed in the photographs of the main rookery

(Station G) by the thinly covered spaces. There was also a perceptible thinning among the small bands of breeding seals under the bluffs between Little Polavina and the main rookery. Photographed July 28.

Little Polavina rookery has apparently suffered a slight decrease. The wide hauling ground between this rookery and the main Polavina was practically bare throughout the season, seals being seen generally close to the bluff in the vicinity of the slopes that give access from the beach. Photographed July 28.

Lukannon rookery.—On that part of this rookery where the seals are crowded, chiefly between the low bluff and the beach, there has been no apparent change, but there were certainly fewer seals than in 1892 upon the hill that divides this rookery from Ketavie. The hauling ground had largely changed from the slope at the west end of the rookery to the sand beach just north of it, as shown in the photograph taken at station 26. Photographed July 17.

Ketavie rookery, now the thinnest rookery on the islands, shows a perceptible decrease since 1892. This decrease is distinguishable in some, if not all, of the photographs of the rookery. Photographed July 17.

Reef rookery.—The hauling grounds at this rookery have not been delineated upon the chart for the reason that the bachelors were driven too often to permit of their lying in a perfectly natural condition. This rookery shows a shrinkage under the low bluffs just north of Garbotch (indicated on the chart), but otherwise there has been no change that I can detect. There was a loss of one or two hundred pups from the storm of July 30, 1893. Sea Lion Rock, lying just off this rookery, was visited and found to be very evenly occupied by breeding seals. The central portions of Reef Point, over which the bachelors travel more or less, is becoming distinctively more thickly covered with grass from year to year. Photographed July 22.

Lagoon rookery remains unchanged since 1892. Photographed August 1.

Tolstoi rookery.—The photographs exhibit only a slight change or thinning out of the seals at this place, which is shown more distinctly on the chart. There was a loss of perhaps 500 young pups from the storm of July 30, 1893. They were swept from the narrow beach below the cliff and deposited in a windrow at high-water mark near the commencement of the sand beach to the northward. There was no other loss of pups here, with the exception of the scattered loss from natural causes. Photographed July 22.

Lower Zapadnie rookery showed no change in number of seals, with the exception of one or two breaks along the shingle beach. Photographed July 22.

Upper Zapadnie rookery is the most difficult seal area on the Pribilof Islands to examine, and as the weather did not permit the use of a boat, the larger bands of seals near the beach could not be approached without disturbing the tract of seals in their rear. There has, however, been a decrease of seal life here, which is, I think, noticeable on the photographs. Photographed July 22.

ST. GEORGE ISLAND.

East rookery shows very little change since last season, except in the distribution of bachelors, the main body of which had hauled out north of the pond instead of south of it as in 1892. Owing to the unfavorable points from which this rookery has to be photographed to avoid disturbing the herd, the change that has taken place here is scarcely perceptible in the photographs. Although the same area is occupied by breeding seals as in 1892, and is so indicated on the chart, the change is there expressed by the words "Thinned out slightly since 1892." Photographed July 15.

Little East rookery presents the same appearance as in 1892. I am not able to detect any change, and the photographs taken there do not seem to indicate any. Photographed July 15.

North rookery.—The seals are disposed on this rookery much as in 1892, but a slight decrease is perceptible, which is also shown by the photograph taken at station 5. Photographed July 14.

Starry Arteel rookery.—The scattered fringe of seals along the main rookery visible in 1892 now seems to have been absorbed into the main body of breeding seals. The chart will be found to indicate a recedence toward the bluff at two or three points. Bachelor seals seem also to be less numerous and were not found distributed so far back as usual, the higher positions on the hill being mostly unoccupied this year. Photographed July 14.

Zapadnie rookery shows more shrinkage than any other of the St. George Island rookeries. The decrease is perceptible in the photograph taken at station 6. The main breeding ground on the hill slope by the bluff is decidedly scattered as compared with 1892, and there are two breaks in the narrow breeding ground along the beach. The hauling ground of bachelors is much more thinly covered, and seals were not found as far back as in 1892. Photographed July 13.

CONCLUSIONS AS TO CONDITION OF ROOKERIES.

Taking all the rookeries of the Pribilof Islands into consideration, it may be safely asserted that the total number of seals upon them has decreased to an appreciable extent since the summer of 1892. The annual increase of young seals has not, therefore, been quite sufficient to offset the loss caused by the continuance of pelagic sealing in the North Pacific Ocean. It is evident, however, that the closing of Bering Sea to sealing vessels during the period of the modus vivendi has had a most salutary effect upon the rookeries of the Pribilof Islands, and that their present condition, so nearly stationary as regards the number of seals since this regulation came in force, is distinctly traceable to the protection thus afforded.

ADDITIONAL PROTECTION FOR THE ROOKERIES.

The erection of watchhouses at all the rookeries and their connection with the villages by telephones and roads has been commenced, and the continuance of this work can not be too strongly urged. The organization of the natives into regular watchmen is not only desirable for the systematic care of the rookeries, but would be a most effective system of discipline for them, as a class of people living most of the time in enforced idleness.

A light mounted field piece, such as a Hotchkiss rapid-firing gun, would be a valuable aid in the work of protection. Sealing vessels have at various times approached the islands for the purpose of sealing or raiding the rookeries, and a thorough protection can not be assured during the absence of Government vessels, which must sometimes happen.

OPENING OF PART OF BERING SEA TO PELAGIC SEALING.

By the provisions of the recent treaty of arbitration, pelagic sealing will hereafter be permitted in Bering Sea after August 1 of each year outside of a radius of 60 miles from the Pribilof Islands. Notwithstanding that the use of firearms will be prohibited, the opportunity afforded by this privilege is likely to produce a very serious effect upon the seal herd belonging to the several rookeries whenever the vessels find continuous good weather. Seals, when in the water, can readily be killed by means of spears, and they are regularly taken in this manner by most of the Indian seal hunters of the Northwest Coast. Many sailing vessels have been accustomed to carry Indian spear hunters with their canoes in preference to the white hunters, who use guns and boats, and we may expect to see full advantage taken of the former method in the free waters of Bering Sea. The open season for seals coming, as it does, at the close of the sea-otter season, will also make available the entire force of Alaskan spear-throwing hunters, who will be the more eager to take advantage of the new privilege, in view of the recent restrictions placed upon otter hunting and the present scarcity of otters. The apparatus employed in the latter fishery is likewise largely adapted to the pursuit of seals. After the month of August, however, the weather soon becomes unsettled and stormy, thus somewhat limiting the period when pelagic sealing can safely be carried on.

Observations made upon the distribution of seals in Bering Sea between July 28 and August 13, 1892, by the steamer *Corwin*, showed conclusively that the nursing seals travel distances of at least 200 miles from the Pribilof Islands in search of food, and consequently that the closed area about those islands, having a radius of only 60 miles, affords them only a very partial protection. The effect of killing large numbers of these females, which must certainly take place, means also the destruction of their pups on shore through starvation and the more rapid thinning out of the herds upon the rookeries than has hitherto occurred. The complete protection of the fur seal in Bering Sea, together with such restrictions upon its killing in the North Pacific Ocean as have been provided by the treaty of arbitration, would no doubt permit a steady increase upon the rookeries where it breeds, but its pursuit in any manner within part of the area it occupies as a feeding ground during the breeding season may be expected to have a disastrous effect upon the breeding rookeries of the Pribilof Islands.

List of the maps showing the outlines of the rookeries on the Pribilof Islands, 1893.[1]

ST. PAUL ISLAND.

Northeast Point rookery	Chart A
Polavina rookery	Chart B
Ketavie and Lukannon rookeries	Chart C
Reef and Garbotch rookeries	Chart D
Tolstoi and Lagoon rookeries	Chart E
Zapadnie and English Bay rookeries	Charts F and G

ST. GEORGE ISLAND.

Starry Arteel rookery	Chart H
North rookery	Chart I
East and Little East rookeries	Chart J
Zapadnie rookery	Chart K

[1] This set of maps not transmitted for publication, the accompanying set for 1895, showing more reduced area of rookeries, being deemed sufficient.

List of the photographs of the seal rookeries on the Pribilof Islands taken during July and August, 1893, by N. B. Miller and C. H. Townsend, showing the dates on which they were made, and also the corresponding views for 1892.[a]

ST. PAUL ISLAND.

Rookery.	Station.	Number of plates in each view.	Dates on which taken.	
			1893.	1892.
Northeast Point	1	1	July 26	July 17.
	2 (north)	1	....do ...	Do.
	2 (south)	1	....do ...	Do.
	3	3	....do ...	Do.
	4	1	....do ...	Do.
	5	5	....do ...	Do.
	5	5	Aug. 9	Aug. 6.
	6	2	July 26	July 20.
	25	1	....do ...	Do.
Polavina	21	2	July 28	Do.
	22	2	....do ...	Do.
	23	2	....do ...	Do.
	24 (near)	1	....do ...	Do.
	G	5	....do ...	July 21.
Lukannon	12[b]	2	July 17	July 19.
	26[b]	2	....do ...	July 14.
Ketavie	13	3	....do ...	July 19.
	14	1	....do ...	Do.
	14½	5	....do ...	Do.
	15	2	....do ...	Do.
Reef	16	3	July 22	Do.
	17	5	....do ...	Do.
	18	2	....do ...	Do.
	19	2	....do ...	Do.
	20	2	....do ...	July 20.
	Grass area	1	....do ...	No date.
	Village Hill	3	Aug. 1	July 18.
Lagoon	27	3	....do ...	July 22.
Tolstoi	11	3	July 22	July 19.
	F[b]	3	....do ...	July 20.
Lower Zapadnie	7	2	....do ...	July 18.
	8	2	....do ...	Do.
	8^{a}	2	....do ...	Do.
Upper Zapadnie	9	2	....do ...	Do.
	10	2	....do ...	Do.

ST. GEORGE ISLAND.

Rookery.	Station.	Number of plates in each view.	1893.	1892.
East	9 (near)	2	July 15	July 15.
	A	2	....do ...	July 27.
Little East	B[b]	2	....do ...	July 28.
North	1	1	July 14	July 14.
	2	(c)	....do ...	Do.
	3	1	....do ...	Do.
	5	2	....do ...	Do.
Starry Arteel	E[b]	2	....do ...	July 28.
Zapadnie	D	5	July 13	Do.
	C	2	....do ...	Do.

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[a] This set of photographs not transmitted for publication, the accompanying series for 1895, showing more reduced condition of rookeries, being deemed sufficient.

[b] United States Fish Commission station.

(c) One negative lost.

THE ROOKERIES IN 1894.

LETTER OF TRANSMITTAL.

UNITED STATES COMMISSION OF FISH AND FISHERIES,
Washington, D. C., February 23, 1895.

SIR: In accordance with your verbal request, I have the honor to transmit herewith a report upon the condition of the seal rookeries, Pribilof Islands, Alaska, during the season of 1894, the same being based upon observations made by one of the assistants of this Commission, Mr. C. H. Townsend, in compliance with the requirements of the act approved March 3, 1893.

Very respectfully,
HERBERT A. GILL,
Acting Commissioner.

The SECRETARY OF THE TREASURY,
Washington, D. C.

INTRODUCTION.

The report herewith submitted is based upon observations made on the Pribilof Islands between July 12 and August 1, and again between September 9 and 13, 1894. It is accompanied by 11 charts and 38 photographic views, the former showing the outlines of the rookeries, the latter illustrating the condition of the most characteristic portions of each rookery, at the time of making the observations. The positions from which the photographs were made are identical with those from which similar views were taken in 1892 and 1893, while the dates of both charts and photographs correspond as closely with those of preceding seasons as the conditions of weather permitted. This report should be considered in connection with those previously submitted, as being one of the series intended to present the yearly changes in the conditions of the rookeries.

The steamer *Albatross* arrived at St. George Island on the morning of July 8, 1894, and remained there at anchor until the 12th without being able to effect a landing on account of stormy weather. Not wishing to detain the ship longer, it was decided to begin the work upon the rookeries of St. Paul Island, where the opportunities for landing are better, and, accompanied by Mr. N. B. Miller, laboratory assistant of the *Albatross*, and Mr. J. Stanley-Brown, I landed at Northeast Point on the evening of the 12th, the *Albatross* sailing for Unalaska at once.

July 13 was spent in examining and photographing Northeast Point and Polavina rookeries, and we reached the village by wagon in the evening, our baggage having been taken there from the Point on the U. S. S. *Ranger*. On the 14th we examined and photographed Zapadnie, Upper Zapadnie, and Tolstoi rookeries. On the 15th, clear weather continuing, we examined and photographed Reef, Ketavie, and Lukannon rookeries, thus completing the necessary photographic work for this island in less time than we had ever been able to do it before. I made a further examination of the rookeries of Zapadnie, Upper Zapadnie, and Tolstoi on the 16th, and plotted upon the base maps the distribution of seals at Tolstoi and Lagoon rookeries on the 17th. Reef, Polavina, Ketavie, and Lukannon were revisited on the 18th for chart data.

Leaving Mr. Miller to develop the plates exposed on St. Paul Island, I sailed on the morning of the 19th for St. George Island on the U. S. S. *Alert*, and succeeded in landing the same evening. On the 20th I collected the necessary chart data for East and Little East rookeries, St. George Island. From the 18th to the 21st, inclusive, the weather was too stormy for photographic work, and it was not until the 22d that I got the first photographs on St. George Island, those of North rookery. The 23d proved stormy, but with better weather on the 24th I secured photographs of East and Little East rookeries. Chart data for North rookery were secured the same day, and I duplicated some photographs of North rookery taken in 1891. From the 25th to the 27th it was too stormy for photographic work, but I collected chart data for Zapadnie and Starry Arteel rookeries on the 27th. On the 28th I photographed the latter rookery.

On the 29th an opportunity was afforded for returning to St. Paul Island on the U. S. S. *Adams*, and, as the most important rookeries are located on that island, I returned without having secured photographs of Zapadnie rookery. I immediately recommenced work on the rookeries of St. Paul Island, spending the 30th at Northeast Point and Polavina rookeries, the 31st at Reef rookery, and August 1 at Lukannon and Ketavie rookeries.

The *Albatross* returned to St. Paul Island on the evening of August 1, and thinking that my time could then be spent more profitably cruising among the fleet of pelagic sealers and observing their work than by remaining longer on the islands, I went on board that evening accompanied by Mr. Miller.

My time while at the islands was spent on the rookeries, whether the weather was clear or stormy, Mr. Miller attending to the development of the plates, thus giving me ample opportunity for going over most of the rookeries two or three times. Satisfactory photographs were taken of all rookeries except Zapadnie, on St. George Island. Station 27 (Lagoon rookery) and the one on Village Hill (Reef rookery) were abandoned, as showing nothing on account of distance. The dates for photographing the rookeries of St. George Island were changed to those of St. Paul Island and vice versa, this change being rendered necessary, as explained above, by the uncertainty of the landings at the former island. St. Paul, moreover, being the more important island, is most deserving of attention, and, in the future, I would recommend the completion of the work on that island first.

Several of the photographic stations on the rookeries were marked with their numbers or letters in white lead, on the nearest permanent bowlders. The stations now marked are as follows:

St. Paul Island.—Reef, Ketavie, Lukannon, Lagoon, Zapadnie, and Upper Zapadnie (Stations Nos. 12, 26, 14, 14½, 15, 17, 18, 19, 20, 27, 7, 8, 8^a, 9, 10).

St. George Island.—East, Little East, North, and Starry Arteel (9, A, B, 1, 2, 3, 5, E).

For most of the remaining unmarked stations heavy stakes will have to be driven into the sand, few permanent bowlders being available.

The photograph of the grass area on Reef rookery was not duplicated owing to bad weather, which is to be regretted, as it would have shown how very rapidly this portion of the Reef is becoming grass-grown.

CONDITION OF THE ROOKERIES.

ST. PAUL ISLAND.

Northeast Point rookery.—Although a comparison of the charts and photographs of this rookery for 1894 with those made in 1893 may indicate a slight diminution of seals, I am not prepared to state that this is the case. Owing to unfavorable weather the observations of last year were made later than they should have been, after the spreading of the rookeries had commenced. The data for the present year having been secured earlier, the difference in the records should be accounted for accordingly. I note, however, an additional break in the belt of breeding seals in the immediate vicinity of the Point.

Polavina rookery.—Although the photographs from Station G show very little change in position, the rookery when viewed from other points appeared to have a well-marked break in the center, which will be found indicated on the chart. Good weather having followed very stormy weather, the seals had taken to the water to a noticeable degree when the photograph was made. I think that no actual decrease can be recorded.

Little Polavina rookery apparently exhibits no diminution since last year and very little change in position.

Lukannon rookery.—No perceptible change in the number or position of breeding seals was noticed here.

Ketavie rookery.—This small and gradually diminishing rookery, I believe, shows a shrinkage since last season, but not a very marked one.

Reef rookery.—No decrease is apparent. The change in distribution is slight.

Lagoon rookery remains unchanged since last year.

Tolstoi rookery.—The seals here are perhaps a little more concentrated at the north end of the rookery; but otherwise there is no change.

Zapadnie rookery.—The hill portion of this rookery is unchanged, but the very thin portion extending about a mile along the shingle beach exhibits several breaks never before noticeable.

While the fur seal, naturally so gregarious, returns year after year under normal conditions to its accustomed breeding grounds, there are indications that it is less at home upon tracts which are becoming thin, and is inclined to concentrate upon adjacent breeding tracts more thickly covered with seals. This appears to be the case with the abovementioned Ketavie rookery, and in the case of Zapadnie to be borne out by the appearance of an increase upon the adjoining rookery of Upper Zapadnie. This scattered beach rookery is illustrated by one of the photographs.

Upper Zapadnie rookery.—An increase since last season being indicated here, I went over the ground very carefully, and, although it may not be apparent in the photographs, the chart will be found to show changes which I believe mean a slight increase.

ST. GEORGE ISLAND.

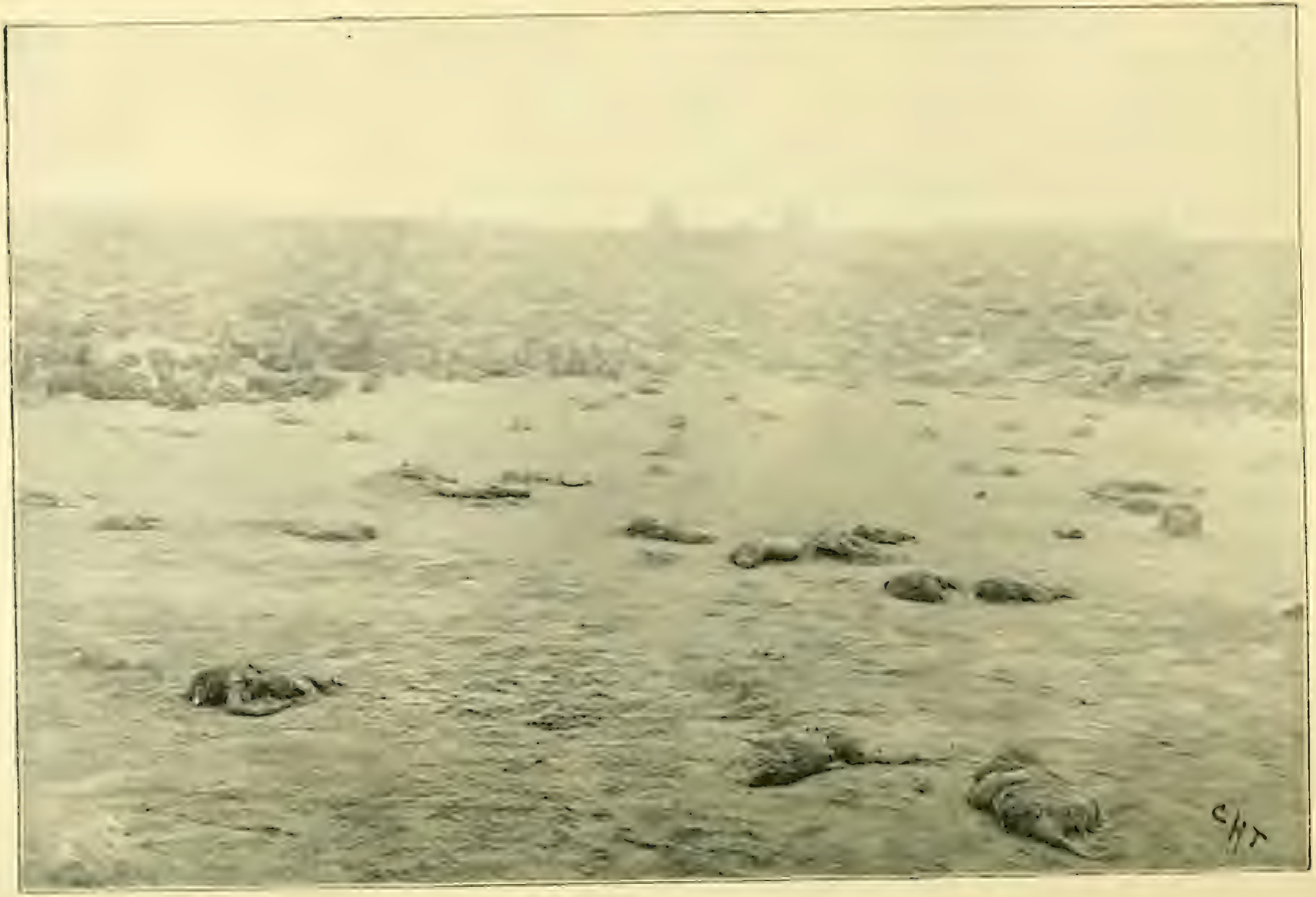
East rookery.—It is possible that this rookery has suffered a slight shrinkage since last season, but I found it difficult to decide that such was the case.

Little East rookery remains unchanged.

North rookery.—Slight and unimportant changes in distribution were observed, but no apparent decrease.

Starry Arteel rookery remains unchanged.

Zapadnie rookery.—There is a widening of the break along the beach portion of the rookery, but no decrease was noticeable.



STARVED SEAL PUPS, SAINT PAUL ISLAND, SEPTEMBER, 1894.

CONCLUSIONS AS TO CONDITION OF ROOKERIES.

At the time of my inspection in July, 1894, the seal rookeries of the Pribilof Islands, taken as a whole, were found to be in nearly the same condition as in 1893. While the number of seals has slowly been diminishing, the decrease having continued even during the period when Bering Sea was closed to pelagic sealing, no decrease in general was noticeable this year up to the date of my departure from the islands on August 1. This is probably traceable to the cessation of sealing in the North Pacific Ocean on May 1, 1894, or soon thereafter. During the months of May and June the migrating seals become massed south of the Alaska Peninsula as they move toward the passes through which they enter Bering Sea, and a very considerable portion of the catch has been taken annually in that region by the fleet of pelagic sealers. By reason of the cessation of pelagic sealing on May 1 of the present year, the seal herd was spared the excessive killing from which it has usually suffered there in the past, and the rookeries, in consequence, presented approximately the same appearance as at the time of my last examination. This was contrary to previous experience, as an annual decrease had always been observed during the several preceding years.

Circumstances affecting seriously the welfare of the seal herd arose, however, before the close of the present season, necessitating a second and later examination of the rookeries, which revealed an alarming change in their condition. By the award of the Paris Tribunal of Arbitration, Bering Sea, with the exception of a zone of 60 miles around the Pribilof Islands, was opened up to pelagic sealers after August 1, with the result of causing great destruction to the seal herd. The killing of over 31,000 seals belonging to these islands and consisting chiefly of nursing females, was followed, necessarily, by the loss, through starvation, of thousands of young seals upon the rookeries.

LOSS OF YOUNG SEALS IN SEPTEMBER AS A RESULT OF PELAGIC SEALING DURING AUGUST.

After finishing the work of inspection upon the Pribilof Islands on August 1, I cruised with the *Albatross* among the fleet of pelagic sealers until September 9, when I landed again upon the islands to investigate the loss of young seals, which was reported as becoming serious.

Thirty-eight vessels known to us, hunting just outside of the prohibited zone, took 31,542 seals during the months of August and September, these consisting for the most part of nursing females, which resulted in the additional loss, by starvation, of the young seals thus left without means of nourishment. Although sealing began on August 1, no dead pups were noticed on the rookeries until about September 1, after which time they were found in increasing numbers, and at the date of my departure from the islands, September 13, careful examination had disclosed a loss of at least 9,000 pup seals, with a prospective loss of nearly as many more found in an emaciated and exhausted condition. With the assistance of Mr. Miller, the resident agents of the Treasury, and Mr. H. C. Chichester, I counted 2,349 pups upon the following rookeries:

ST. GEORGE ISLAND.

North rookery, September 9 and 10, Townsend and Miller (whole rookery)	405
Starry Arteel, September 9, Townsend (whole rookery)	305
East rookery, September 10, Townsend and Agent Ziebach (hill slope only)	130
Little East, September 9, Miller (whole rookery)	140
Total counted	980

Zapadnie rookery and beach portion of East rookery not counted.

ST. PAUL ISLAND.

Garbotch (or Reef) rookery, September 10 and 12, Townsend and Chichester (west side only)	492	
Lagoon, September 12, Townsend, Chichester, and Treasury Agent Judge (whole rookery)	105	
Tolstoi, September 12, Townsend, Chichester, and Treasury Agent Judge (hill and nearer beach)	497	
Lower Zapadnie, September 12, Townsend, Chichester, and Treasury Agent Judge (whole rookery)	275	
Total counted		1,369
Total on both islands		2,349

On other rookeries showing a similar condition I compared the uncounted area with that already counted, estimating the total loss as follows:

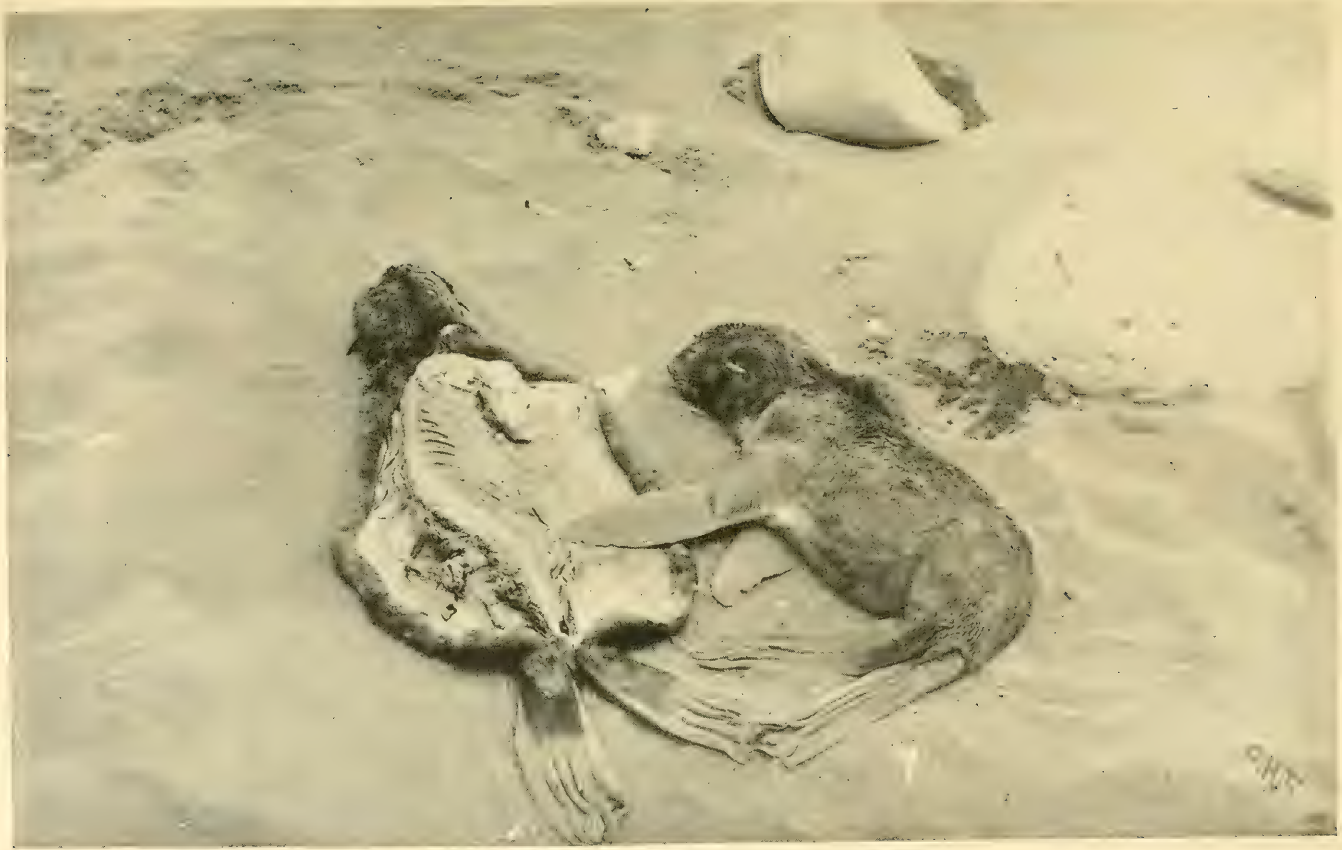
Upper Zapadnie		350
Tolstoi (uncounted portion)		200
Reef		1,400
Lukannon and Ketavie		350
Polavina		550
Little Polavina		100
Northeast Point (greatest of all rookeries)		3,000
Total St. Paul Island, estimate for uncounted area		5,950
East Rookery (St. George. uncounted portion)	200	
Zapandie (St. George)	450	
Total St. George Island, estimate for uncounted area		650
Total uncounted, both islands		6,600
Total counted, both islands		2,349
Total loss, both islands		8,949

Persons familiar with the comparative area of the rookeries will see how low these estimates are.

The bodies counted were those of pups that had died within ten days or two weeks and were fresh, although greatly emaciated. No rotten bodies, such as might have died during the breeding season from injuries received on the rookeries, were included, although a limited number of such were seen.

The attempt to count weak, emaciated pups was given up, owing to the difficulty of separating any but the very weakest from the more active and strong pups. Large numbers of starving pups were observed, and they were, to the best of my belief, nearly as numerous as the dead ones. In counting it was found necessary to pass over the rookeries systematically, which resulted in clearing the section counted, and driving most of the seals into the water or farther inland, according to the direction from which they were approached. All adults and active pups moved off in a body, followed by the less active and starving pups, there being occasional weak, tottering pups unable to do so. These fell over frequently and seldom moved far. They were thin and gaunt, and clearly starving. The majority of the pups were strong and active and cows were observed everywhere suckling them. All dead pups were confined to the regular breeding grounds and were evenly distributed, indicating that they died near where their mothers had left them.

Young seals are very fat and seem to endure a month or more of starvation before they succumb. I have, from year to year, observed



STARVED SEAL PUPS, SAINT PAUL ISLAND, SEPTEMBER, 1894.

occasional young seals brought into the villages on the Pribilof Islands to be raised as pets, but in no case have they fed, except when milk was forced into them, and even then they did not live more than three weeks. Young seals continue to live entirely upon their mother's milk until late in the fall. During my examination of the rookeries, from September 9 to 13, I found the females suckling their young as commonly as they are observed doing a month earlier in the season. One handsome albino pup, as large as any of the others, I secured as a natural history specimen. It was coffee-colored, with white flippers. It was left upon a high rock, and finding, upon my return in the evening, that two quarts of thick milk had run from its mouth, I photographed it. It weighed, after losing its milk, 18¾ pounds.

I dissected several dead pups, finding in all cases an almost complete disappearance of fat from under the skin and an entire absence of food of any kind in the stomach. Accompanying photographs of dead pups illustrate, in a measure, the condition in which they were found, but most of the photographs are unsatisfactory.

List of the charts showing the outlines of the rookeries on the Pribilof Islands, July, 1894.[1]

ST. PAUL ISLAND.

Northeast Point rookery	July 13, Chart A
Polavina rookery	July 18, Chart B
Ketavie and Lukannon rookeries	July 15, Chart C
Reef and Garbotch rookeries	July 15, Chart D
Tolstoi and Lagoon rookeries	July 17, Chart E
Zapadnie and English Bay rookeries	July 14, Charts F and G

ST. GEORGE ISLAND.

Starry Arteel rookery	July 27, Chart H
North rookery	July 24, Chart I
East and Little East rookeries	July 20, Chart J
Zapadnie rookery	July 27, Chart K

List of the photographs of the seal rookeries on the Pribilof Islands, taken in July, 1894, by N. B. Miller and C. H. Townsend, showing the dates on which they were made.[a]

ST. PAUL ISLAND.

Rookery.	Station.	Number of plates in each view.	Date on which taken.	Rookery.	Station.	Number of plates in each view.	Date on which taken.
Northeast Point	1	1	July 13	Ketavie	14	1	July 15
	2 (north)	1	Do.		13	3	Do.
	2 (south)	1	Do.		14½	4	Do.
	3	3	Do.		15	2	Do.
	4	1	Do.	Reef	16	3	Do.
	5	5	Do.		17	5	Do.
	6	2	Do.		19	2	Do.
	25	1	Do.		20	2	Do.
Polavina	21	2	Do.	Tolstoi	11	3	July 14
	22	2	Do.		F	2	Do.
	23	2	Do.	Lower Zapadnie	7	2	Do
	24	1	Do.		8	2	Do.
	G	6	July 26		8^{a}	2	Do.
Lukannon	12	3	July 15	Upper Zapadnie	9	2	Do.
	26	2	Do.		10	3	Do.

[a] This set of photographs not transmitted for publication, the accompanying series for 1895, showing more reduced condition of rookeries, being deemed sufficient.

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[1] This set of maps not transmitted for publication, the accompanying set for 1895, showing more reduced area of rookeries, being deemed sufficient.

List of the photographs of the seal rookeries on the Pribilof Islands, etc.—Continued.

ST. GEORGE ISLAND.

Rookery.	Station.	Number of plates in each view.	Date on which taken.	Rookery.	Station.	Number of plates in each view.	Date on which taken.
East	9	2	July 24	North	2	1	July 24
	A	2	Do.		3	1	Do.
Little East	B	2	Do.		5	2	Do.
North	1	1	Do.	Starry Arteel	E	2	July 28

OBSERVATIONS RELATIVE TO PELAGIC SEALING IN BERING SEA DURING THE SEASON OF 1894.

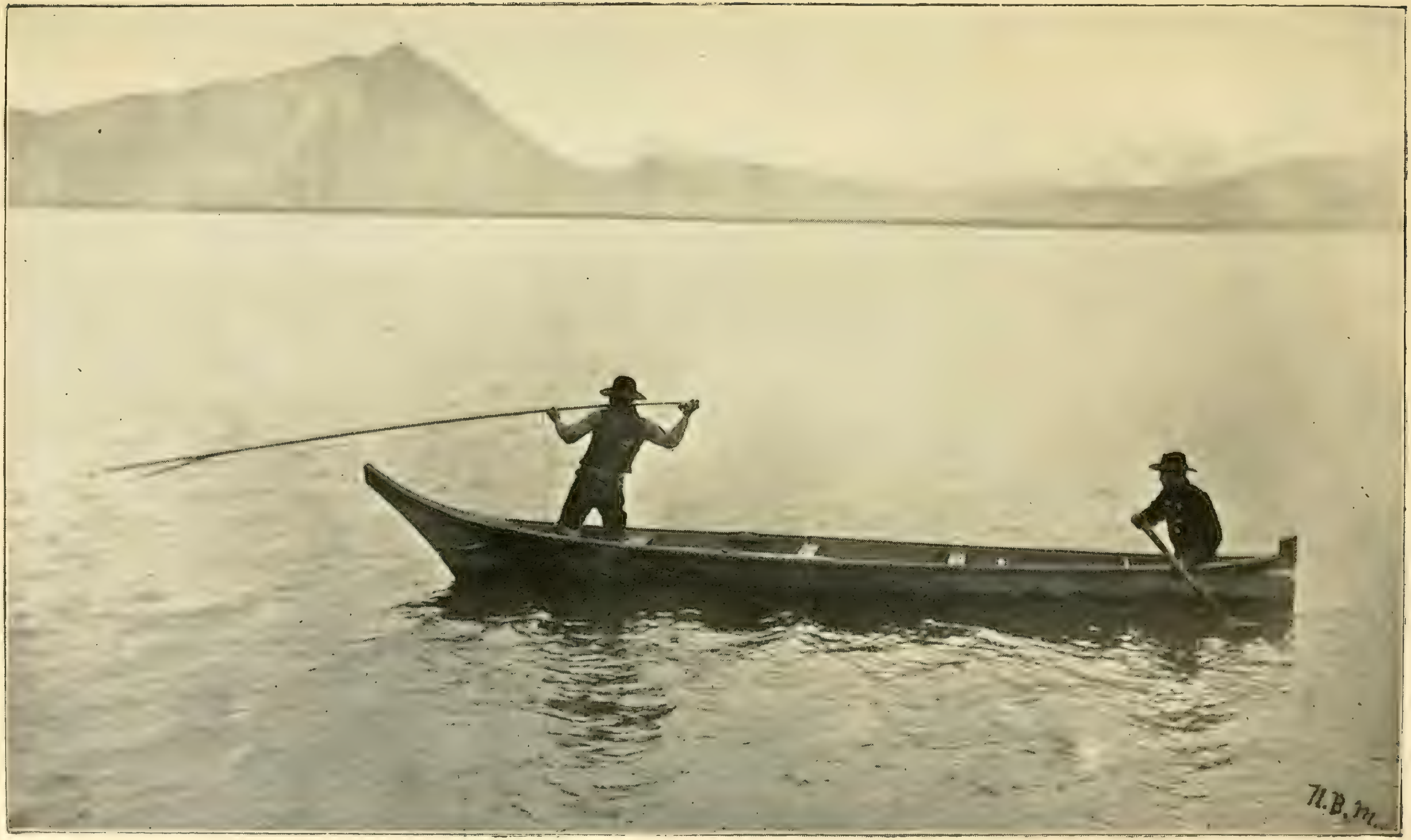
INTRODUCTION.

The report herewith presented includes the results of observations made at sea between August 1 and September 20, 1894, together with certain data subsequently obtained at Victoria, Port Townsend, Seattle, and San Francisco. The work at sea was carried on in connection with the cruise of the United States Fish Commission steamer *Albatross*, at that time detailed as one of the vessels of the Bering Sea patrol fleet. The cruising ground assigned to the *Albatross* was to the westward and southward of the islands, chiefly outside of the protected zone, but trips were also made to the northwest and southeast of the islands. During the cruise sealing vessels were boarded whenever met with, and I accompanied the boarding officer at all times, for the purpose of obtaining information in connection with their operations from day to day. In addition to the data secured by the boarding officer, I copied from the sealer's log books all notes regarding the positions where seals were taken, and examined all fresh skins not yet consigned to the kenches.

The record of positions where seals were taken by Canadian vessels is incomplete, as most of those vessels continued sealing for some time after being boarded, while others were not met with. Similar data obtained from American vessels at sea were finally secured in full after their arrival at home ports.

Sealers were constantly questioned concerning sealing matters, and statements made by them will be found in the following pages.

I have, under a separate heading, called attention to the effectiveness with which pelagic sealing was carried on in Bering Sea by the 38 vessels engaged in it. It will be seen, after proper consideration of this point, how very destructive to the life of this industry the presence of a larger fleet would be. In my report for last year I pointed out the loss of young seals that might be looked for upon the islands if a large number of female seals were to be taken in Bering Sea during the breeding season. This has been borne out by the experience of the past season, 20,000 being the lowest estimate that can be made for dead pups, and we may confidently expect to see a still greater loss of this kind next season if sealing is continued on the feeding grounds. The results of the season's pelagic catch in Bering Sea were already apparent on the rookeries when I went over them from September 9 to 13, and will be still more so when the annual examination is made next July. The rookeries in their present condition can not lose 50,000 seals



INDIAN SEALING CANOE. SHOWING METHOD OF THROWING SPEAR.

in Bering Sea, in addition to the North Pacific catch, without such a loss being perceptible.

As stated under the heading referring to the condition of the rookeries in 1894, the beneficial results of the cessation of sealing in May and June were apparent on the seal islands in July. This would seem to indicate that a respite of two months in addition to such protection as was afforded by the modus vivendi, would be sufficient to keep the seal herd in its present condition. We may also infer that any additional restrictions that might be placed on sealing in the North Pacific would count as a gain, and permit an increase in the herd in proportion to the protection afforded, provided, of course, that there be no increase in the size of the sealing fleet.

Accompanying this report are a series of photographs illustrating some of the features of sealing with spears, and also a chart showing the distribution of the seal herd on its feeding grounds in Bering Sea.

DATA OBTAINED FROM THE SEALING FLEET.

The following tables[1] contain the daily sealing data of the pelagic sealing fleet in Bering Sea during August and September, 1894, giving the catch of each vessel, sex of seals taken, latitude and longitude of each day's operations, with more or less data on the crew, boats, and hunters of each vessel. With exception of one vessel not yet returned it is complete for the American portion of the sealing fleet. The data for Canadian vessels are given for such vessels as I was able to board in Bering Sea. The remainder having turned in their log books to the collector at Victoria I could not complete the work when I went there.

A record of the daily operations of the pelagic sealing fleet, even in part, yields new and valuable information. It shows the number of males and females at different distances from the Pribilof Islands, the portions of Bering Sea most frequented by the seals, the exact number of days during the season when the weather permitted of seals being taken;[2] it is data upon which to base an accurate map of seal distribution during the breeding season, etc. These records, kept by the sealers in accordance with the regulations put in force by the Paris award, constitute the first accurate information of the kind and supply data respecting the seals at sea, of which we have long been in need.

The daily records of the sealers should have been collected by the custom-houses to which they reported, but it was neglected, and I have had to search for them, as some of the discharged masters carried their log books away with them, making it very difficult to collect the information.

The catch of the Canadian portion of the fleet in Bering Sea appears to be 26,341. By questioning many of the sealers at Victoria I ascertained it to be 26,312, which tallies very closely with the figures given in the report of the collector at Victoria, 26,341. This number, plus the American catch of 5,201, makes the Bering Sea pelagic catch of 1894 31,542, unless there were vessels sealing in Bering Sea of which we have no knowledge, which is very doubtful.

There were 27 Canadian vessels in Bering Sea and only 11 American vessels. The Canadian vessels hunting with Indian spearmen from Vancouver and Queen Charlotte islands were very successful, while the

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[1] The tables referred to will be found appended to the report for 1895.

[2] This is partly worked out in the tables following for August and September.

American vessels, with the exception of two or three, made poor catches. Sealing with spears in Bering Sea has therefore been profitable to Canadian rather than American vessels.

In respect to the claim that Bering Sea weather is sufficiently unfavorable for sealing to afford the seals protection from excessive spear hunting, the accompanying tables, although based on incomplete data, show that there was only one day during the season, from August 1 to September 21, when seals were not taken, and it is possible that when all the data are accessible through exchange with Great Britain it will be shown that seals were taken daily throughout the season.

The same tables indicate that storms in Bering Sea are local in their nature, vessels to the westward of the Pribilof Islands having been hove-to, while others to the southward were making good catches.

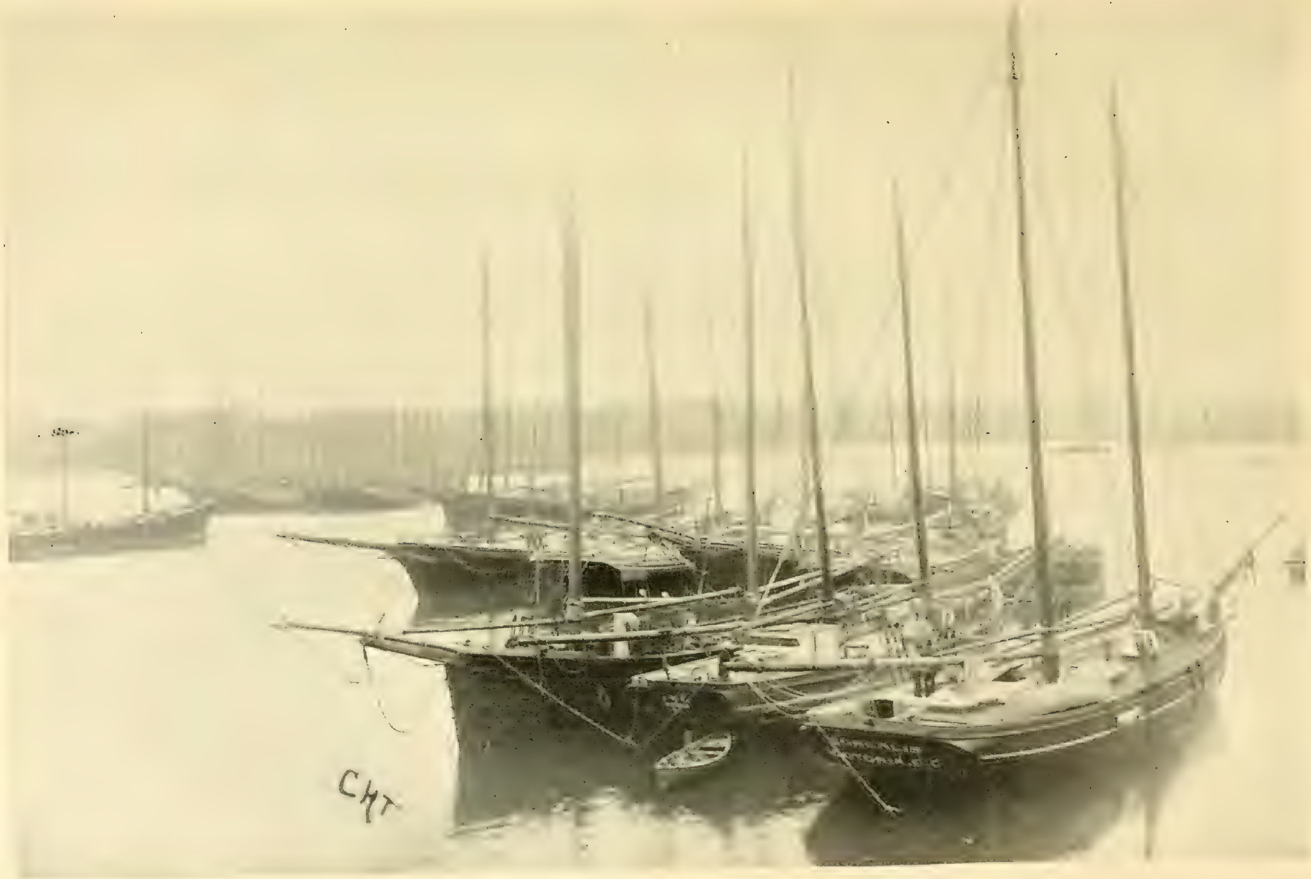
COMMENT ON THE PROPORTIONS OF THE SEXES REPORTED BY THE SEALING FLEET.

I have compared the proportions of the sexes of seals taken in Bering Sea by the Canadian and American fleets, and having considered both in the light of depositions now in the possession of the Treasury Department, made by London furriers, I can not admit that the proportion of male and female seals reported by the vessels is correct. American sealers reported a greater proportion of females, and in no case reported more males than females, as some of the masters of Canadian vessels have done. The latter were sealing very close to vessels reporting from two to five times as many females as males. When I questioned the masters of the schooners *Favorite*, *Walter Rich*, *Henrietta*, etc., as to their alleged greater number of males, their explanations to me were that their seals were skinned in the canoes by the Indians, and the pelts thrown on deck as they returned after dark, and that under the circumstances they had no time to bother with inspecting skins minutely as to sex. Such returns are unreliable, and there is no doubt about the proportion of female seals taken by the Canadian fleet being much greater than reported. This is borne out by the sworn statements, now in possession of the Treasury Department, of Messrs. Martin and Teichmann, of London, as to the sex of seal skins derived from the pelagic catch of 1894 in Bering Sea and the North Pacific Ocean. These gentlemen personally inspected some of the largest consignments of seal skins taken in 1894 and found 85 to 90 per cent of them to be females.

Mr. Lupp, of San Francisco, a seal hunter of several years' experience, informs me that the catch of 1,400 seals made by the vessel he sailed with on the Japan Coast in 1892 consisted almost entirely of females with young, there being less than 50 males in the entire lot, and that of a catch of 1,100 seals taken by his vessel, the *Louis Olsen*, in 1894, in the same region, all were females but about one dozen.

Mr. John Fanning, who cruised as a hunter with the schooners *Denny* and *Retriever*, informs me that nine out of every ten seals taken on the Japan Coast by him were females, and that when sealing off the Commander Islands eight out of every ten were females in milk. I questioned other sealers on this point, eliciting similar statements.

In view of the above statements of London furriers, the statements of masters of Canadian vessels as to the uncertainty of their method of ascertaining the sex of each day's catch, and the statements of Japan Coast sealers as to the great proportion of females in pelagic catches, to say nothing of our knowledge of the subject from results apparent



A PORTION OF THE CANADIAN SEALING FLEET, VICTORIA HARBOR, 1894.

on the Pribilof Islands, the returns of the Canadian sealers operating in Bering Sea may well be questioned. They report but 14,636 females in a catch of 26,341, while the American fleet reports 3,813 females in a catch of 5,201—a much greater proportion. Not one American sealer reported more males than females. One of them, the *Deeahks*—captain and all hands being Indians—reported only 155 males in a catch of 1,023, while seven Canadian sealers reported more males than females. One Canadian sealer, the master of the *Borealis*, apparently without guile, has come very near the truth in reporting only 90 males in a catch of 1,059 seals.

I ascertained upon inquiry at the custom-houses at Port Townsend and San Francisco that the catches of but three of the American sealers from Bering Sea had been examined by experts in furs to determine the proportions of the sexes represented. These were the *Therese*, *Jane Grey*, and *Rose Sparks*. The catch of the *Louis Olsen*, an American sealer, landed at Victoria, was examined by my colleague, Mr. A. B. Alexander, of the United States Fish Commission.

None of the others, either American or Canadian, were subjected to such an examination, but their returns, as a whole, are still capable of correction in the light of depositions by the London furriers, who received and inspected the bulk of the pelagic catch.

The examination of the catches of the four vessels named above shows the proportion of females to range from two-thirds to four-fifths of their catch. As to the catches of the *Ella Johnson*, *Deeahks*, *Stella Erland*, *Ida Etta*, *Columbia*, and *Allie Algar*, that of the *Deeahks* has evidently been faithfully recorded, while the others have at least placed themselves on the safe side. Of the Canadian fleet, the *Labrador*, *Aurora*, *Mary Ellen*, *Walter Earle*, *San Jose*. *Beatrice*, etc., reporting from two-thirds to three-fourths females, are also on the safe side, while the *Borealis* stands unique in reporting almost an entire catch of females (only 90 males in a catch of 1,149).

As to the *Sapphire*, *Ainoko*, *Walter Rich*, *Favorite*, *Henrietta*, etc., the less said the better. They are convicted of inaccuracy by their own admissions. If there was intention to deceive as to the proportion of the sexes in Bering Sea, discrepancies should have been guarded against, as comparisons with the returns made by the *Borealis*. *Deeahks*, *Walter Earle*, etc., are damaging.

The proportion of females in the Canadian catch has not been represented in good faith, as it does not correspond with what the fur trade know to be the actual conditions; with what nine sealers out of ten say about the composition of pelagic catches in general, and with what we known by count and observation to have been the loss of young seals by starvation.

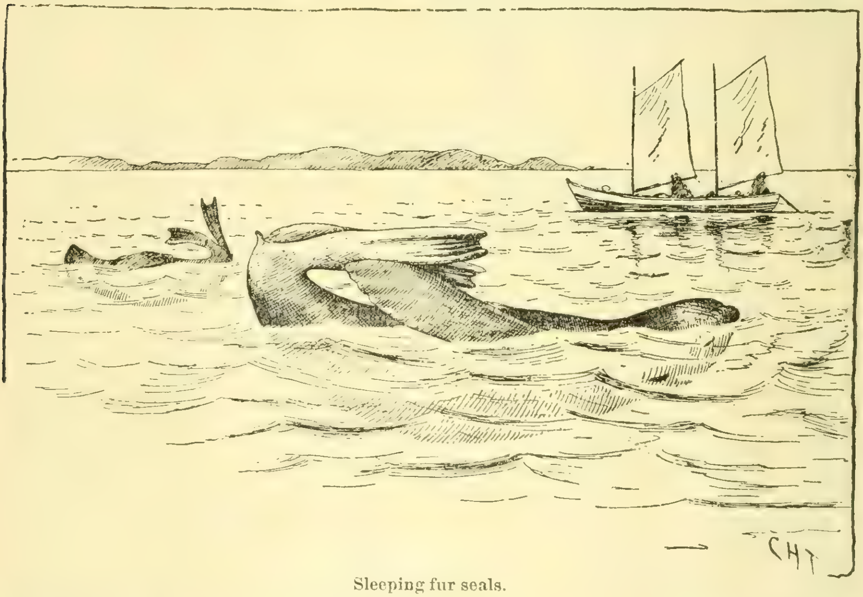
ABSENCE OF FEMALES FROM ROOKERIES AFTER AUGUST FIRST, AND EASE WITH WHICH THEY MAY BE TAKEN AT SEA.

On August 1, 1894, just before leaving the Pribilofs on an extended cruise on the pelagic sealing grounds. I examined two small rookeries very carefully (Ketavie and Lukannon). for the purpose of ascertaining the proportion of females upon the breeding grounds. On that date I estimated that about 80 per cent of the seals present consisted of males and young, clearly indicating the great extent to which the females were feeding at sea.

The cruising ground of the *Albatross* for the first week in August was far to the northwest of the islands, where very few seals were seen. On the 7th, just outside the protected zone and to the northwest of St.

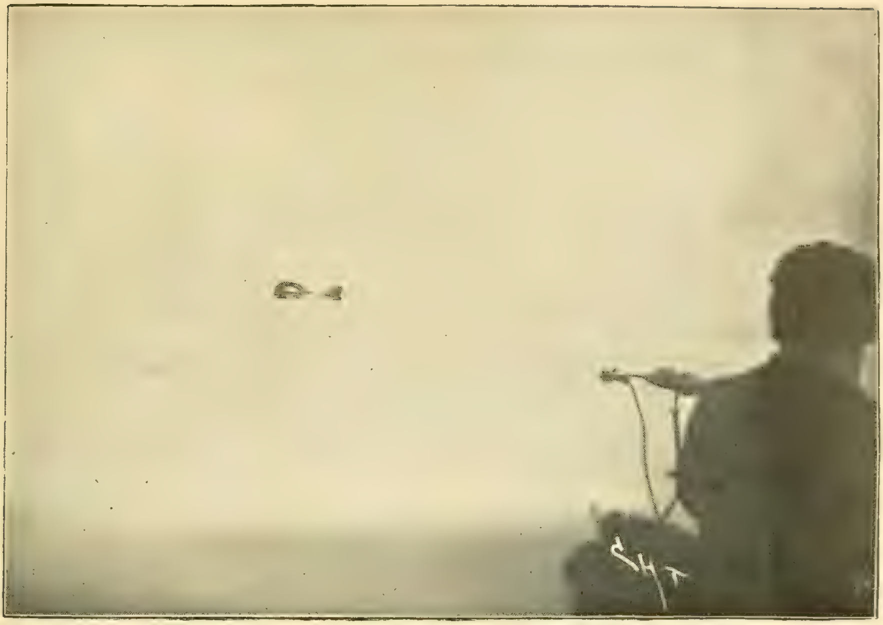
Paul, we found seals in abundance. The sea being perfectly smooth, I went out in the dingey a few hundred yards from the ship and photographed several seals, showing their positions when asleep and awake. The distance at which we were able to photograph them was from 30 to 40 feet. In the three-quarters of an hour 26 seals were counted. Most of them were sleeping, and all were females, judging by size alone. The photographs show the customary attitudes. Seals sleeping at sea have little more than the nose, lower jaw, and hind flippers above water, the fore flippers being raised occasionally as the animal scratches itself or rolls slowly from side to side. The back is always down and deeply submerged.

As a rule sealing with spears is practicable only when seals are found asleep, the ordinary spearing distance being 30 to 35 feet. To the fur seal's unfortunate habit of sleeping much at sea is chiefly traceable its diminution, for it is at such times most readily approached by the pelagic sealer and taken with guns or spears. The number of seals to be observed asleep in Bering Sea is greater than elsewhere, the migration being over and the animals feeding at their natural habitat. It is a well-known fact of natural history that breeding male seals do not leave the rookeries during the breeding season, and that young pups can not leave the immediate vicinity of the islands until they depart on their first migration southward.



Sleeping fur seals.

From the almost constant presence on the hauling grounds of the nonbreeding males, it is also well established that they do not leave the islands to any great extent. The females alone constitute a class that feed at long distances from the islands during the breeding season. Their excursions in search of food extend over 200 miles, and commencing soon after the birth of their young are continued to the close of the season. There can be no doubt but that the nursing females are the most constantly exposed of any class of seals to the destructive methods of pelagic sealing in Bering Sea, and that their capture during the breeding season is, of all the agencies tending toward the diminution of the seal herd, the one most to be deplored.



SLEEPING FUR SEAL. USUAL POSITION. AUGUST 7, 1894, BERING SEA.
(Floating back down, with hind flippers turned forward. Photographed at distance of 35 feet.)

FUR SEALS JUST AWAKENED, AUGUST 7, 1894, BERING SEA.

The opening of Bering Sea to pelagic sealing has proved the most fatal of all the provisions of the Paris award.

EFFECTIVE METHODS OF THE SEALING FLEET.

The effectiveness with which pelagic sealing may be carried on in a circumscribed hunting ground like Bering Sea may be more clearly set forth by directing attention to the number of hunting boats engaged during the past season. The sealing fleet consisted of 38 schooners, carrying from 6 to 20 boats or canoes apiece—the average number being about 12. The boats hunted in all directions, frequently going 10 miles away from the vessels to which they belonged, the hunting areas of the different schooners thus overlapping at times. I have often spoken canoes 8 miles from their schooners. Pursuing seals in this systematic way, 38 vessels carrying somewhat more than 450 boats, took 31,542 skins in six weeks, notwithstanding the fact that many of them were late in reaching Bering Sea from the Japan coast, and left early on account of having their North Pacific catches on board, for the purpose of being early in market, on account of the impatience of Indian hunters already wearied with the long Japan coast cruise, lack of provisions, or for other reasons.

THE USE OF SPEARS.

Of the Canadian fleet in Bering Sea, all but six schooners carried Indian hunters from Vancouver and Queen Charlotte islands. These natives have been taking seals off their own shores with the spear from time immemorial, and it was a fatal mistake on the part of the Paris Tribunal to underestimate the efficiency of spears in such hands, a fact doubtless well known to those having charge of the British side of the case.

The spear used during the past season is very similar to that figured by Scammon twenty years ago in writing of pelagic sealing by these natives.[1] The spear pole is 12 to 14 feet long, pronged, with two detachable barbed iron spear points, secured by a 30-yard line, the end of which is tied to the boat. When a seal is struck the barbed points slip off the pole, the latter being recovered after the seal has been pulled alongside the canoe and clubbed. Seals fight vigorously at such times and seldom fail to leave permanent marks of their sharp teeth on boats and canoes, while large bulls are very dangerous to handle.

Pelagic sealing is altogether impracticable for our own Aleut natives, their light skin-covered bidarkies not being constructed to withstand such attacks as wounded seals make with their teeth.

CHANGE OF FEEDING GROUNDS.

The fur seal changes its feeding grounds in Bering Sea from year to year. The changes appear to be quite marked, and are doubtless dependent on the food supply. The pelagic catch for the summer of 1894 was made chiefly to the southeast of the Pribilofs, the rest of the catch being made south, southwest, west, and northwest of the islands. A small proportion only were taken along the border of the plateau.

Capt. J. W. Todd, of the sealer *Rose Sparks*, states that in 1889 he found seals plentiful to the northeast of the Pribilofs, and moderate numbers were to the northwest and southeast. In 1887, when sealing with the schooner *Lilly L.*, he found the herd chiefly to the southeast, taking 197 seals in two days.

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[1] Marine Mam., Scammon, p. 159.

Captain McCauley, of the sealer *Beatrice*, found seals plentiful 250 miles to the westward of the Pribilof Islands in 1891. Captain McLean, of the sealer *Favorite*, also reports a great abundance of seals to the westward of the islands in 1891 (latitude 56° 50′, longitude 173° 30′), ten canoes taking (with guns) 972 seals in three days.

Captain Guillams, of the sealer *Louis Olsen*, having in former years found seals in greatest numbers to the westward of the Pribilofs, cruised persistently in that portion of Bering Sea during the past season, taking only 84 seals.

Many other sealers confidently expecting to find the bulk of the seal herd to the westward of the Pribilofs cruised there at the opening of the past season without success, but later made good catches to the southeastward.

While engaged in pelagic sealing investigations with the United States revenue cutter *Corwin* in 1892 fur seals were plentiful to the westward of the Pribilofs, the cutter *Rush*, cruising to the east at the same time, meeting with very few.

NOTES ON THE FOOD OF SEALS.

Captain Todd says the food of seals taken near the mainland consists largely of salmon, and that this is true of the Japan and Copper Island sealing grounds as well as of the North American coast.

Captain Magnesen, of the sealer *Walter Earle*, reports the seals taken on August 25, 1894 (latitude 56° 13′, longitude 172° 44′), as feeding on salmon.

Capt. S. Balcom, of the sealer *Walter Rich*, reported taking salmon occasionally from the stomachs of seals speared in Bering Sea in August, 1894.

Capt. H. F. Sieward, of the sealer *Mascot*, in 1894, collected the stomachs of three seals, containing pollock apparently, at the following position: Latitude north 56° 10′, longitude west 171° 45′; August 28, latitude north 58° 01′, longitude west 173° 29′; latitude north 58° 02′, longitude west 172° 45′, September 8.

Captain Sieward writes that other seals opened at the first position contained nothing but squid, and at the second position cod and squid; but it is possible that the fish observed were pollock, which closely resemble cod.

Contents of the stomachs of 33 fur seals[1] taken during the month of August, 1894, at distances varying from 100 to 140 miles west and northwest of the Pribilof Islands, along the border of the plateau, collected by A. B. Alexander, with the schooner *Louis Olsen*, show the following:

Date.	Latitude north.		Longitude west.		Sex.		Contents of stomach.
	°	′	°	′	M.	F.	
Aug. 4	57	50	173	48	....	4	Fish, much digested, apparently pollock.
6	58	30	173	56	3	3	Do.
6	58	30	173	56	1	....	Pollock or cod, with one-half dozen squid; beaks small.
7	58	30	173	56	1	18	Fish, much digested, apparently pollock.
7	58	30	173	56	1	...	Full peck of red-fleshed fish resembling salmon; bones not determined.
10	58	27	172	46	....	1	Fish, digested, probably pollock.
11	57	42	172	52	....	....	Pollock.

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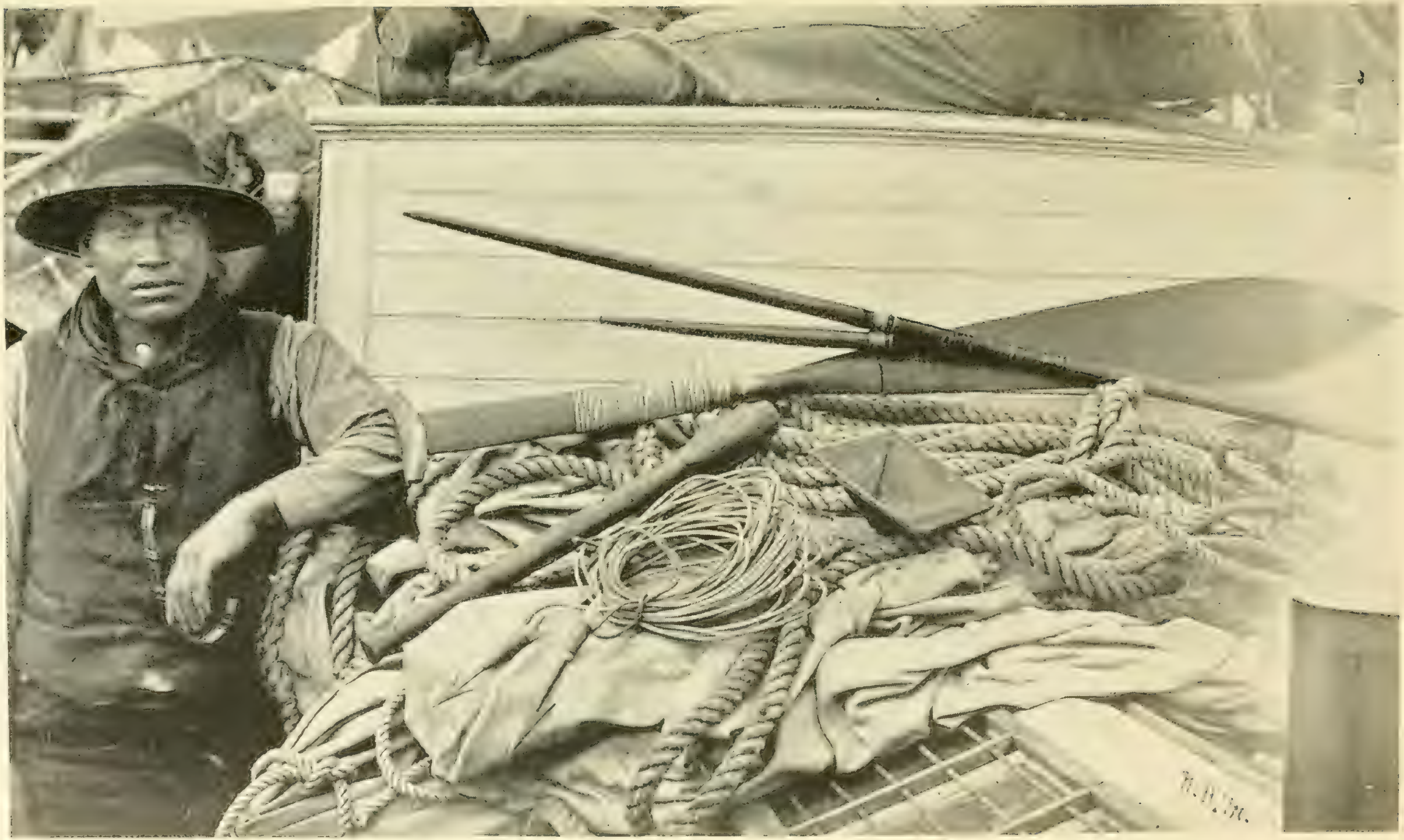
[1] Fifteen stomachs containing fish bones were saved for further examination, others thrown away.



INDIAN HUNTER OF SEALING CANOE. SHOWING DOUBLE-POINTED SPEAR POLE; DETACHING SPEAR POINTS WITH LINE 30 YARDS LONG; PADDLE; KILLING CLUB, AND WOODEN CANOE BAILER. SCHOONER FAVORITE.

Mr. Alexander reports the seals taken by the *Olsen* to have been feeding on pollock, whenever identification was made with certainty. Several seals were speared in the act of eating pollock, the fresh remnants making identification certain. During the cruise large cod were taken at sealing stations in depths of 60 and 70 fathoms, and were so abundant that the decks could have been filled with them, although the stomachs of the seals taken contained pollock. The stomachs of the cod contained starfish, prawns, squid, jelly-fish, and a few small fishes; nothing of the kind being found in the stomachs of seals taken at the same positions. Some of the cod weighed 30 pounds, the average being 9 pounds, while an examination of the fish eaten by the seals shows the fish to have been of the size of pollock or smaller.

It would appear that the seals taken by the *Olsen* were feeding near the surface.

PROBABLE USE OF FIREARMS IN SEALING DURING SEASON OF 1894.

In regard to the surreptitious use of firearms in Bering Sea, I have to state that conspicuous blood stains were noticed on several rookeries between September 9 and 12, 1894, both by the Treasury agents and myself, and indicated the presence of wounded animals. In a few cases dead seals were found. The blood as noticed in a dozen or more of places was spattered upon the rocks from the beach well back into the rookeries, leaving distinct bloody trails, with occasional bowlders well stained where the animals had paused. The stains were fresh, although being rapidly effaced by moving seals and wet weather.

DEAD SEALS FOUND (ALL ADULTS).

North rookery, 1 female; Starry Arteel, 1 female; Garbotch, 1 male and 5 females; Tolstoi, 3 females; Zapadnie, 1 male and 2 females; total, 14.

The carcasses on Zapadnie were comparatively fresh, the others had been dead probably three weeks. From the fact of these carcasses being in the rookeries and rubbed and fouled by seals constantly crawling over them, I could not determine the presence of gunshot marks. I have left out of the above count three rotten carcasses found on Garbotch, that apparently died early in the season.

Mr. A. B. Alexander reports that while cruising with the *Louis Olsen* firing was heard from the vessel on August 10 during foggy weather, and that the hunters reported hearing guns constantly while out in the boats the same day. The crew are of the opinion that the firearms were being used for sealing, although nothing was seen.

The hunters of the *Favorite* reported in Unalaska on August 27 that they heard firearms in Bering Sea on several occasions. When I boarded the *Walter Rich* in Bering Sea September 6, the captain reported having speared a seal on the 5th freshly wounded with buckshot.

Reports of a similar character came to our ears at times during the season. The patrol fleet found it impracticable to search vessels at sea—nothing more than a cursory examination being possible under the circumstances. If guns are to be prohibited, sealing vessels should be searched at the Unalaska wharf, or some other favorable place where there is a possibility of overhauling their cargoes in an effective manner.

Fur-seal catch in Bering Sea in 1894.

[From official sources.]

AMERICAN VESSELS.

Vessel.	Males.	Females.	Total.	Remarks.
Ella Johnson	322	892	1,214	Entered at Port Townsend.
Deeahks	155	868	1,023	Do.
Stella Erland	219	542	761	Do.
Ida Etta	204	532	736	Do.
Columbia	180	223	403	Do.
Allie Algar	128	199	327	Do.
Therese	81	237	318	Entered at San Francisco.
Rose Sparks	37	160	197	Do.
Jane Grey	46	92	138	Do.
Louis Olsen	16	68	84	Catch landed at Victoria.
Total	1,388	3,813	5,201	

CANADIAN VESSELS.

Vessel.	Males.	Females.	Total.	Vessel.	Males.	Females.	Total.
Triumph	1,163	2,077	3,240	Henrietta	427	340	767
Sapphire	1,226	879	2,105	Kilmeny	307	327	634
Annie Moore	938	1,009	1,947	Saucy Lass	290	378	668
Ainoko	1,092	565	1,657	Mascot	299	246	1,103
Minnie	679	986	1,665	Mary Ellen	105	352	457
Walter Rich	1,000	749	1,749	Rosie Olsen	425	431	856
Favorite	752	488	1,240	Vera	80	115	195
Beatrice	342	818	1,160	Aurora	79	138	217
Katherine	490	569	1,059	Arietis	39	52	91
Venture	417	492	909	Shelby	323	145	377
Kate	303	564	867	Teresa?			?670
San Jose	256	593	749	Labrador	179	381	560
Fawn	310	336	646	Umbrina	30	30	60
Walter Earle	155	517	672				
Borealis	90	1,059	1,149	Total	11,705	14,636	26,341

TOTAL CATCH, AMERICAN AND CANADIAN, IN BERING SEA.

	Males.	Females.	Total.
American	1,388	3,813	5,201
Canadian	11,705	14,636	26,341
Total	13,093	18,449	31,542

Fur-seal catch of Canadian vessels for 1894.

[From official sources.]

Vessels.	Tons.	Crews.		Catch.					Total.
		White.	Indians.	British Columbia coast.	Japanese coast.	Copper Island.	Bering Sea.		
							Male.	Female.	
Enterprise	69	22			1, 254	314			1, 568
Rosie Olsen	39	6	16		1, 043		425	431	1, 899
Umbrina	99	25			2, 588	153	30	30	2, 801
Oscar and Hattie	81	24			1, 733	176			1, 909
Diana	150	19			1, 961	433			2, 394
Brenda	100	26			2, 383	343			2, 726
Arietis	86	25			1, 197		39	52	1, 288
Casco	63	22			1, 926				1, 926
Dora Siewerd	24	26			2, 584				2, 584
Walter A. Earle	68	8	20		1, 471		155	517	2, 143
Fawn	159	6	18		911		310	336	1, 557
Agnes Macdonald	107	26			1, 707	471			2, 178
W. P. Hall	99	24			710				710
Mermaid	73	25			1, 603	503			2, 108
City of San Diego	46	16			1, 304	250			1, 554
Mary Taylor	43	19			874	250			1, 124
Libbie	93	22			1, 010	200			1, 210
May Belle	58	14			925	907			1, 122
Mary Ellen	63	23			1, 909	86	105	352	2, 452
Viva	92	26			1, 437				1, 437
W. P. Sayward	60	20			606	35			641
Penelope	70	20			1, 306	296			1, 602
Vera	60	19			1, 075		80	115	1, 270
Carlotta G. Cox	76	24			1, 947				1, 947
Triumph	98	8	36	1. 320			1, 163	2, 077	4, 560
Otto	86	25			1, 014	623			1, 637
E. B. Marvin	96	23			2, 118				2, 118
Sapphire	109	8	32	535			1, 226	879	2, 640
Annie E. Paint	82	26			1, 497	531			2, 028
Geneva	92	27			1, 092	558			1, 650
Teresa	63	25			1, 102	120			1, 222
Sadie Turpel	56	22			1, 783	171			1, 954
Ocean Belle	83	22			530	274			804
Maud S	97	24			1, 343	86			1, 429
Aurora	41	18			693	21	79	138	931
Florence M. Smith	99	27			96	81			177
Beatrice	66	5	22	358			342	818	1, 518
Mascot	40	4	16		558		299	246	1, 103
Favorite	180	5	37	606			752	488	1, 846
Annie C. Moore	13	8	37	309			938	1, 009	2, 256
Labrador	25	5	14	308			179	381	868
Wanderer	25	2	7	400					400
Pioneer	66	24		418		1, 263			1, 681
Saucy Lass	38	7	17	170			290	378	838
Borealis	37	6	20	303			90	1, 059	1, 452
Katharine	82	6	26	269			490	569	1, 328
Ainoko	75	5	22	467			1, 092	565	2, 124
Kate	58	5	20	79			303	564	946
Shelby	16	5	10	34			232	145	411
Venture	48	3	17				417	492	909
Walter L. Rich	76	9	25	691			1, 000	749	2, 440
Mountain Chief	23	1	13	175					175
Fisher Maid	21		8	92					92
Minnie	46	6	20	488			679	986	2, 153
San José	31	5	14	20			256	593	869
Kilmeny	19	2	12				307	327	684
Henrietta	31	5	17	315			427	340	1, 082
C. D. Rand	51	7	22	357					357
Beatrice	49	21			1, 703				1, 703
Canoe catch by Indians				3, 989					3, 989
Total	3, 866	888	518	11, 703	48, 993	7, 437	11, 705	14, 636	94, 474

Description.	1894.	1893.
Number of vessels	59	55
Men in white crews	818	847
Men in Indian crews	518	432
British Columbia coast catch	11, 703	29, 113
Japan coast catch	48, 993	29, 206
Copper Island catch	7, 437	12, 013
Bering Sea catch	26, 341	
Total Canadian catch	94, 474	70, 332

Fur-seal catch of American vessels for 1894.

[Prepared by A. B. Alexander.]

Vessel.	Northwest coast.	Japan coast.	Copper Islands.	Bering Sea.	Total.
Alton		1, 185			1, 185
Alexander		810			810
Anaconda		397			397
Anna Matilda		785			785
Allie I. Algar		1, 395		327	1, 722
Bonanza		1, 724			1, 724
Bowhead		1, 407			1, 407
C. G. White		936			936
Emma and Louisa		1, 166			1, 166
Emma	66				66
Eppinger		1, 080			1, 080
Edward E. Webster		1, 650			1, 650
Ella Johnson				1, 214	1, 214
Ethel	5				5
Geo. Peabody		231			231
Geo. R. White[a]	80				80
H. C. Wahlberg		326			326
Henry Dennis	6	855			861
Herman		968	324		1, 292
Ida Etta	126			736	862
Jane Grey		1, 155		138	1, 293
Kate and Ann	15	672			687
Louis D	15	1, 600			1, 615
Louis Olsen		1, 197		84	1, 281
Lillie L		594	84		678
Josephine		150			150
Mary H. Thomas[b]					
Mascot[c]		535			535
Mattie T. Dyer		862	290		1, 152
Mathew Turner[d]		857			857
Penelope		656			656
Prescott		325	102		427
Retriever		837	661		1, 498
Rattler		1, 046	109		1, 155
Rosie Sparks		420		197	617
St. Paul	36				36
Sophia Sutherland		1, 788			1, 788
San Diego[d]		600			600
Stella Erland				761	761
Teresa		686		318	1, 004
Volunteer	100				100
Willard Ainsworth		893	201		1, 094
Winchester		1, 606			1, 606
Amature[e]	225				225
Columbia[e]	564			403	967
C. C. Perkins[e]	45				45
Deeahks[e]	400			1, 023	1, 423
Dart[e]	29				29
Felitz[e]	160				160
James G. Swan[e]	600				600
Puritan[e]	180				180
Total	2, 652	31, 376	1, 771	5, 201	41, 000

[a] This vessel not yet returned.

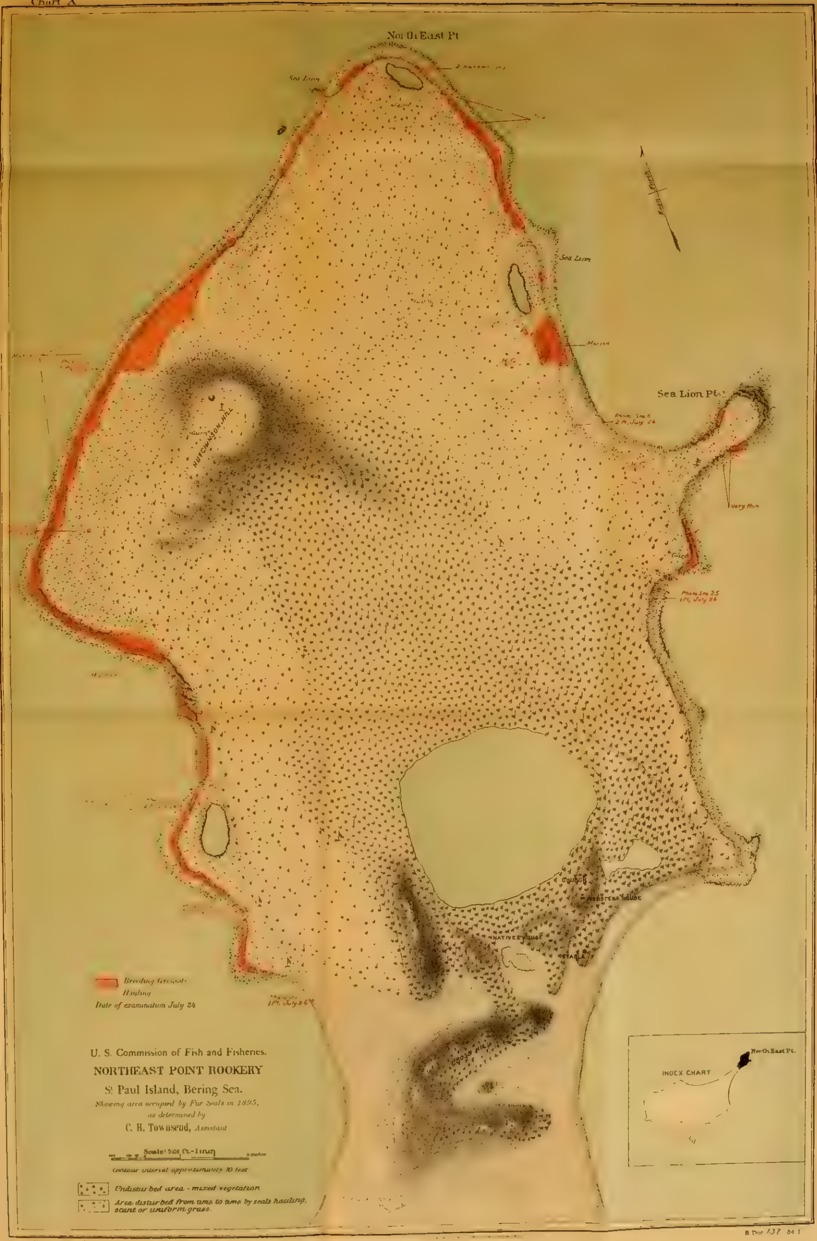
[b] Lost; number of skins not known.

[c] Lost; 535 skins taken; none saved.

[d] Lost; skins not saved.

[e] Indians from Neah Bay.

Chart A



Breeding Grounds

Hauling

Date of examination July 24

U. S. Commission of Fish and Fisheries.

NORTHEAST POINT ROOKERY

S^t^ Paul Island, Bering Sea.

Showing area occupied by Fur Seals in 1895,

as determined by

C. H. Townsend, *Assistant*

Scale 528 ft.-1 inch

Contour interval approximately 10 feet

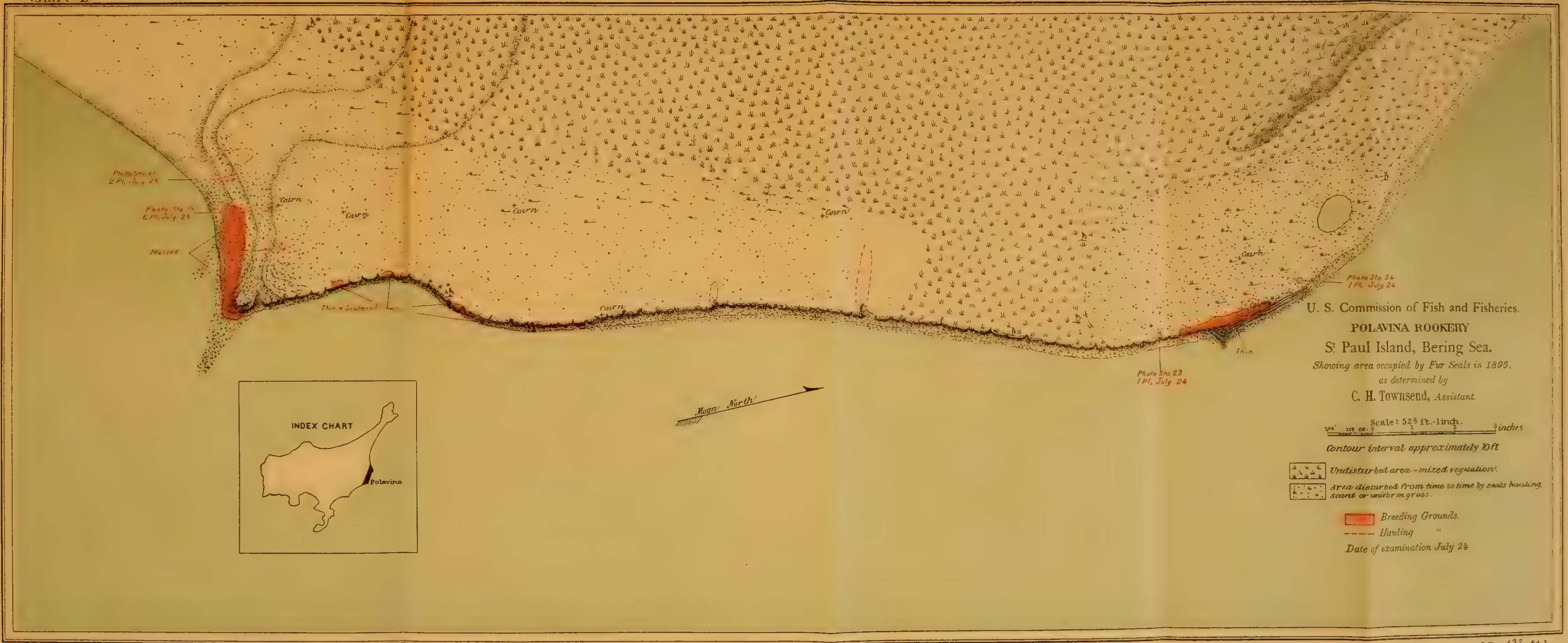
Undisturbed area - mixed vegetation

Area disturbed from time to time by seals hauling, scant or uniform grass.

Base Map prepared by Joseph Stanley Brown

S Doc 137 54 1

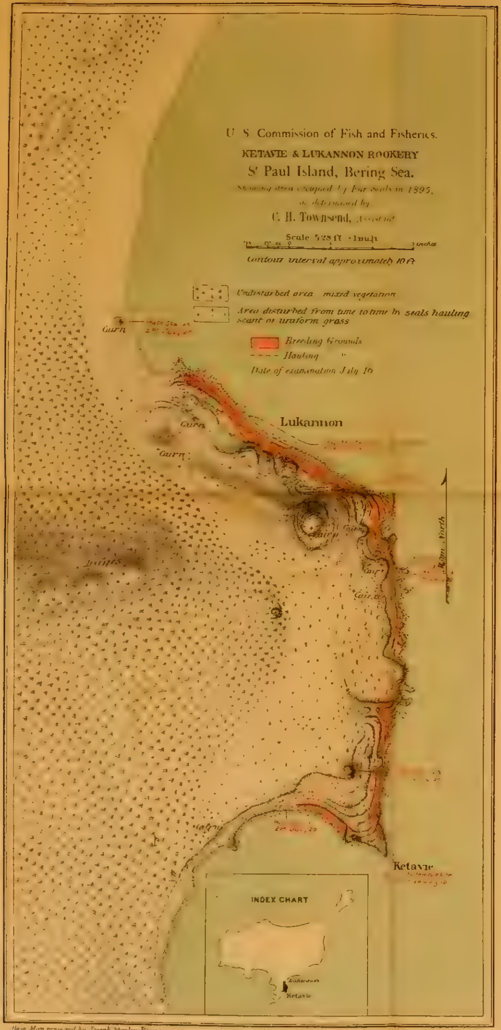
Chart B


U. S. Commission of Fish and Fisheries.
POLAVINA ROOKERY
S^t Paul Island, Bering Sea.
Showing area occupied by Fur Seals in 1895,
as determined by
C. H. Townsend, Assistant.
Scale: 528 ft.-1inch.
264' 132 66 0 1 2 3 inches
Contour interval approximately 10 ft
Undisturbed area - mixed vegetation.
Area disturbed from time to time by seals hauling, scant or uniform grass.
Breeding Grounds.
Hauling "
Date of examination July 24
INDEX CHART
Polavina
Magn. North
Photo Sta 21
2 Pl, July 25
Photo Sta G
6 Pl, July 25
Massed
Thin & Scattered
Cairn
Cairn
Cairn
Cairn
Cairn
Cairn
Photo Sta 24
1 Pl, July 24
Photo Sta 23
1 Pl, July 24
Thin

Base Map prepared by Joseph Stanley-Brown.

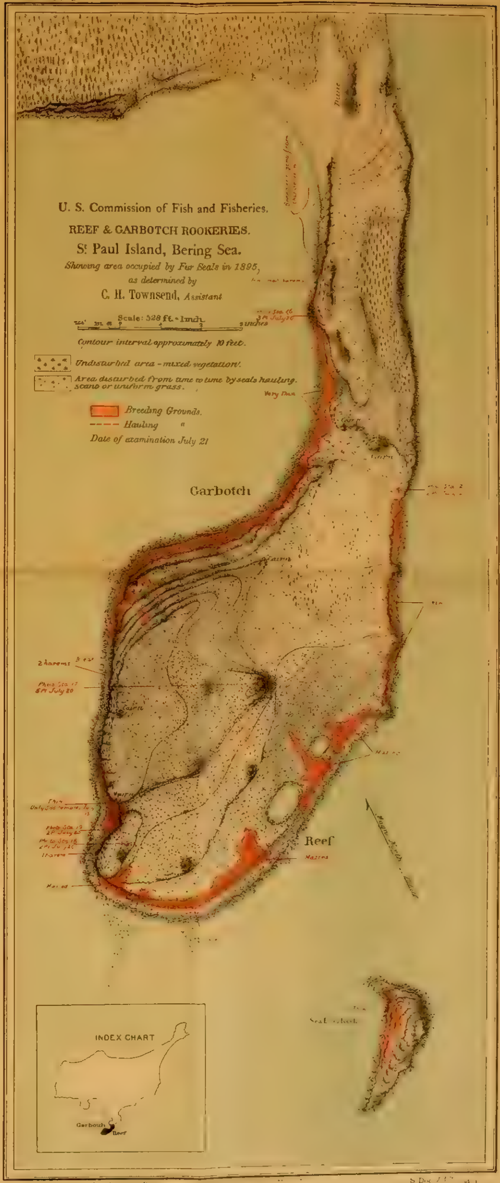
THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

Chart C


U. S. Commission of Fish and Fisheries.
KETAVIE & LUKANNON ROOKERY
S^t Paul Island, Bering Sea.
Showing area occupied by Fur Seals in 1895,
as determined by
C. H. Townsend, Assistant
Scale 528 ft. = 1 inch
inches
Contour interval approximately 10 ft.
Undisturbed area - mixed vegetation
Area disturbed from time to time by seals hauling scant or uniform grass
Breeding Grounds
Hauling "
Date of examination July 16
Lukannon
Ketavie
Cairn
Magn. North
INDEX CHART
Lukannon
Ketavie

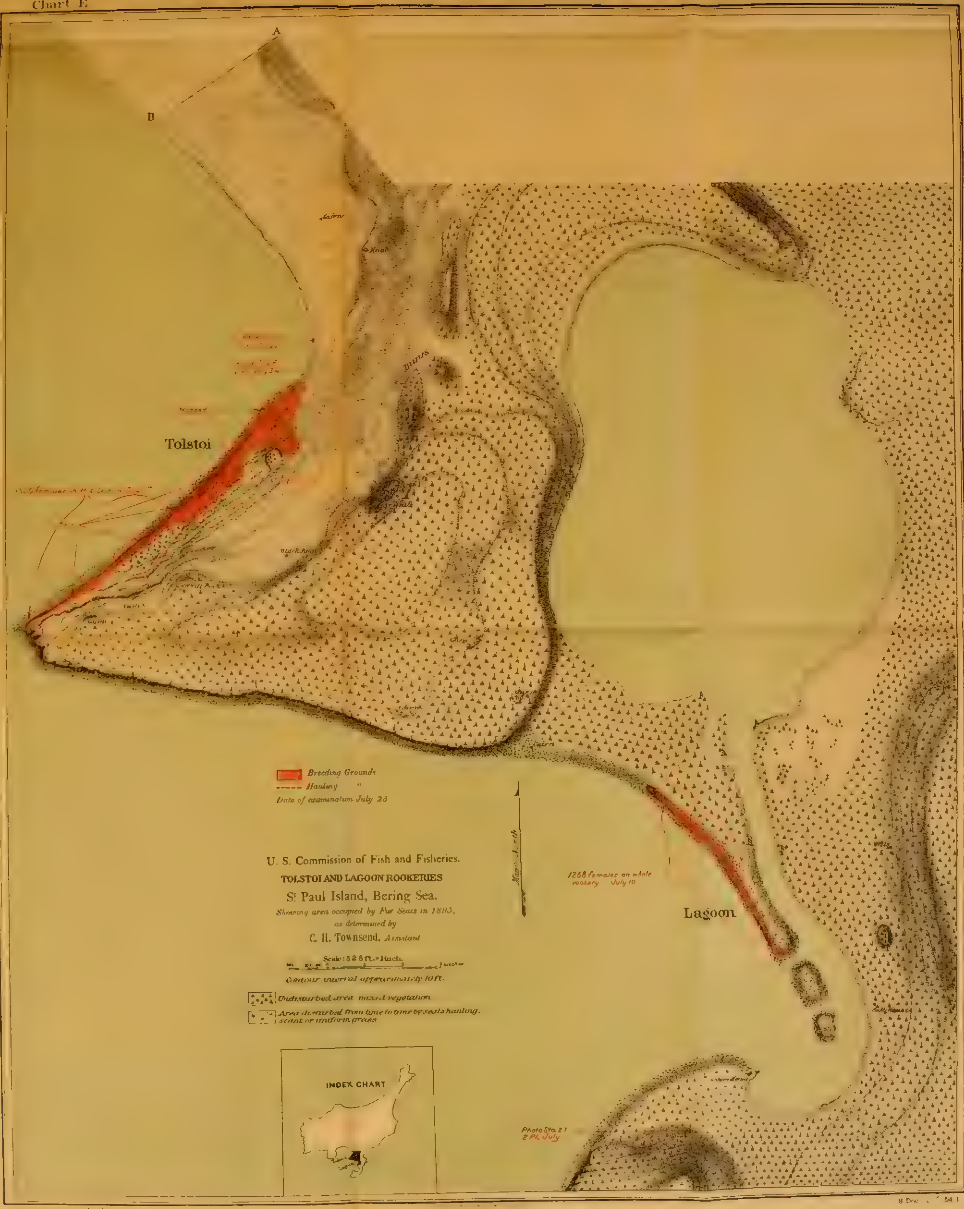
Base Map prepared by Joseph Stanley-Brown

Chart D


U. S. Commission of Fish and Fisheries.
REEF & GARBOTCH ROOKERIES.
S^t Paul Island, Bering Sea.
Showing area occupied by Fur Seals in 1895,
as determined by
C. H. Townsend, Assistant
Scale: 528 ft. = 1 inch.
3 inches
Contour interval approximately 10 feet.
Undisturbed area - mixed vegetation.
Area disturbed from time to time by seals hauling. scant or uniform grass.
Breeding Grounds.
Hauling "
Date of examination July 21
Garbotch
Reef
Cairn
Very Thin
Photo Sta. 17
Massos
Seal Rock
Magn. North
INDEX CHART
Garbotch
Reef

Base Map prepared by Joseph Stanley-Brown

Chart E



U. S. Commission of Fish and Fisheries.

TOLSTOI AND LAGOON ROOKERIES

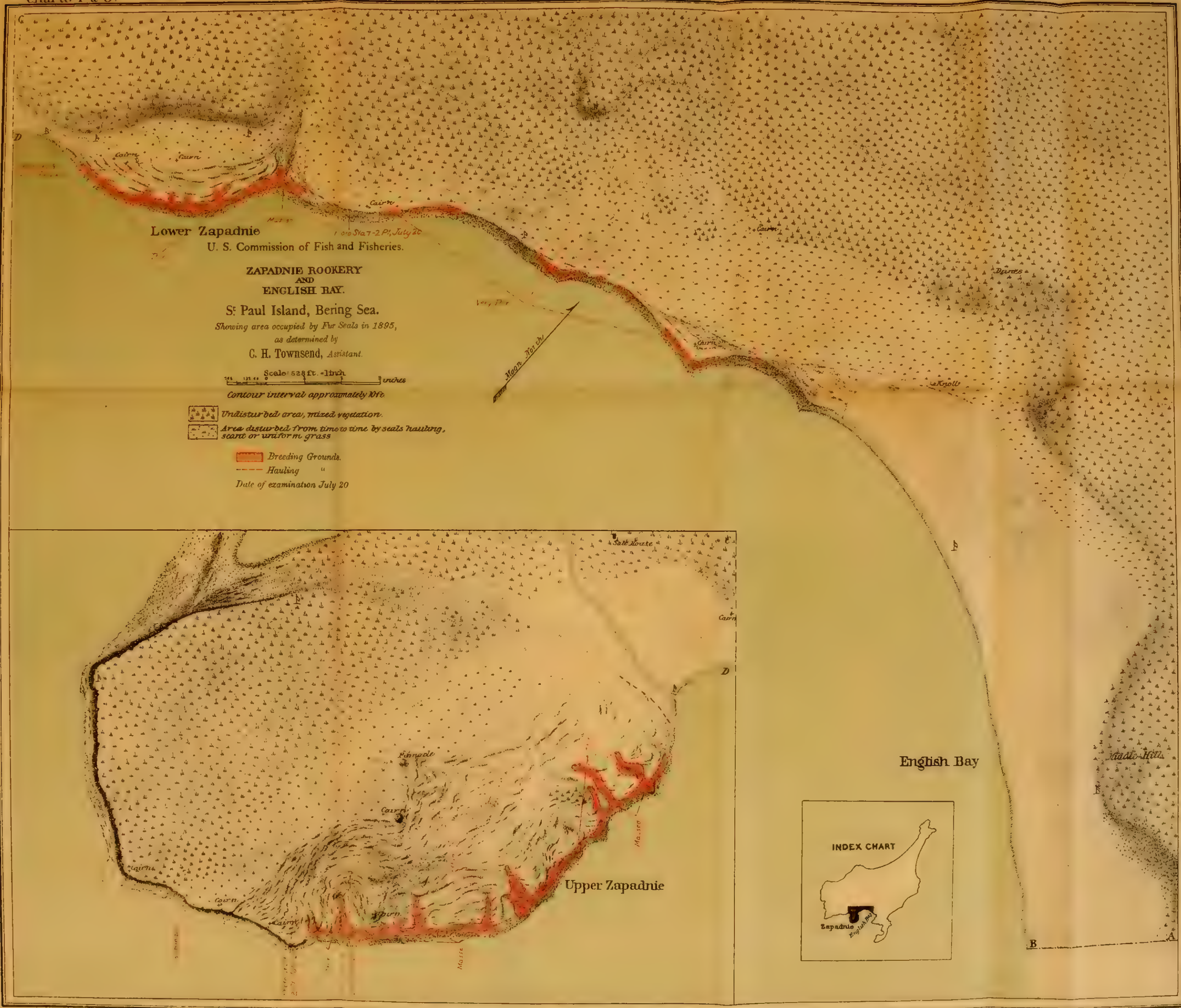
S^t Paul Island, Bering Sea.

Showing area occupied by Fur Seals in 1895,
as determined by
C. H. Townsend, *Assistant*

Scale: 528 ft. = 1 inch.

Contour interval approximately 10 ft.

A
B
Cairn
Knob
Dunes
Tolstoi
Black Knoll
Cairn
Lagoon
Breeding Grounds
Hauling "
Date of examination July 28
Undisturbed area mixed vegetation
Area disturbed from time to time by seals hauling, scant or uniform grass
Magnetic North
INDEX CHART
1268 females on whole rookery July 10
Photo Sta. 27
2 Pl. July



U. S. Commission of Fish and Fisheries.

ZAPADNIE ROOKERY
AND
ENGLISH BAY.

St. Paul Island, Bering Sea.

Showing area occupied by Fur Seals in 1895,
as determined by
C. H. Townsend, *Assistant.*

Scale: 528 ft. = 1 inch

Contour interval approximately 10 ft.

▨ *Undisturbed area, mixed vegetation.*
▨ *Area disturbed from time to time by seals hauling, scant or uniform grass*
🟥 *Breeding Grounds.*
---- *Hauling* "

Date of examination July 20

Chart J

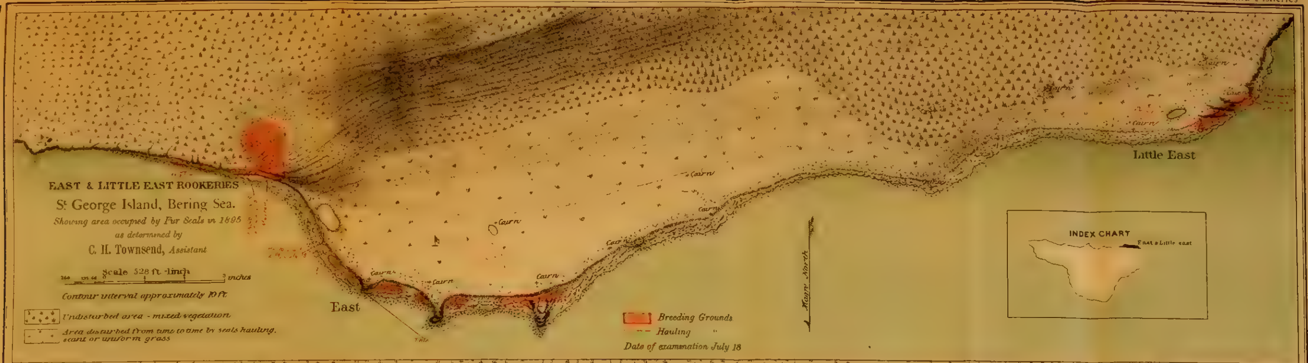

EAST & LITTLE EAST ROOKERIES
St George Island, Bering Sea.
Showing area occupied by Fur Seals in 1895
as determined by
C. H. Townsend, Assistant
Scale 528 ft.-1inch
inches
Contour interval approximately 10 ft.
Undisturbed area - mixed vegetation
Area disturbed from time to time by seals hauling, scant or uniform grass
Breeding Grounds
Hauling "
Date of examination July 18
Magn North
INDEX CHART
East & Little east
East
Little East
Cairn

Chart I

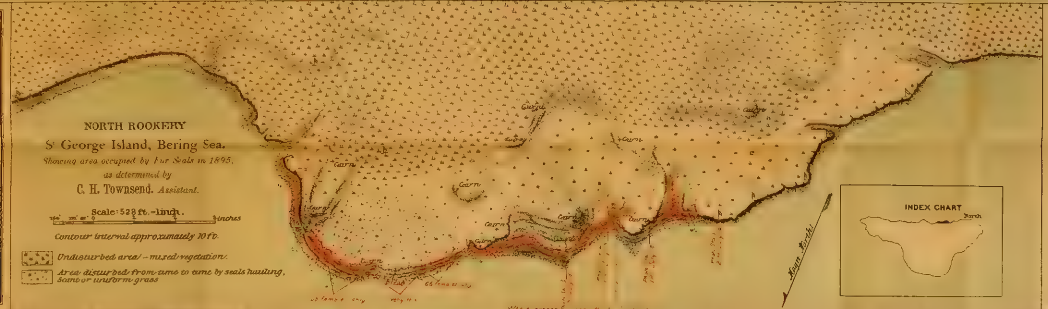
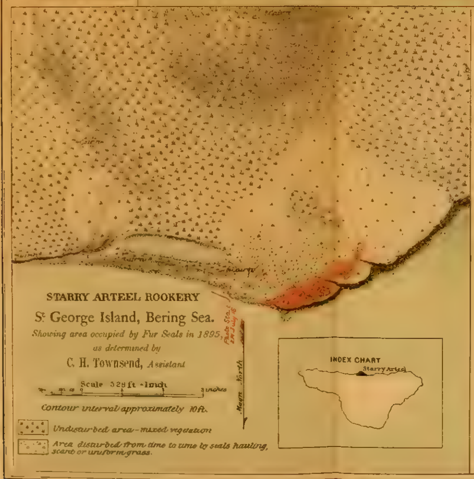
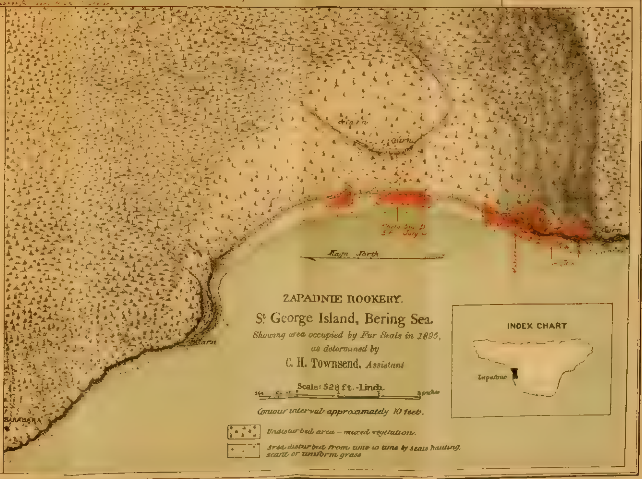

NORTH ROOKERY
St George Island, Bering Sea.
Showing area occupied by Fur Seals in 1895,
as determined by
C. H. Townsend, Assistant.
Scale: 528 ft.-1inch.
inches
Contour interval approximately 10 ft.
Undisturbed area - mixed vegetation
Area disturbed from time to time by seals hauling, scant or uniform grass
Magn North
INDEX CHART
North
Cairn

Chart H


STARRY ARTEEL ROOKERY
St George Island, Bering Sea.
Showing area occupied by Fur Seals in 1895,
as determined by
C. H. Townsend, Assistant
Scale 528 ft -1inch
inches
Contour interval approximately 10 ft.
Undisturbed area - mixed vegetation
Area disturbed from time to time by seals hauling, scant or uniform grass.
Magn North
INDEX CHART
Starry Arteel
Cairn

🟧 Breeding Grounds
---- Hauling "
Date of examination July 19

Chart K


ZAPADNIE ROOKERY.
St George Island, Bering Sea.
Showing area occupied by Fur Seals in 1895,
as determined by
C. H. Townsend, Assistant
Scale: 528 ft.-1inch.
inches
Contour interval approximately 10 feet.
Undisturbed area - mixed vegetation.
Area disturbed from time to time by seals hauling, scant or uniform grass
Magn North
INDEX CHART
Zapadnie
Cairn
BARABARA

THE ROOKERIES IN 1895.

LETTER OF TRANSMITTAL.

U. S. COMMISSION OF FISH AND FISHERIES,
OFFICE OF THE COMMISSIONER,
Washington, February 1, 1896.

SIR: I have the honor to forward herewith copies of two reports by Mr. C. H. Townsend, naturalist of the United States Fish Commission steamer *Albatross*, entitled as follows:

Report upon the condition of the seal rookeries of the Pribilof Islands, Alaska, in 1895.

Report on pelagic sealing in 1895.

The former is illustrated by 11 charts and 42 photographic views, of which only the charts have been completed, and are now transmitted. The photographs are in course of printing and will be furnished at an early date.

Very respectfully,

HERBERT A. GILL,
Acting Commissioner.

The SECRETARY OF THE TREASURY,
Washington, D. C.

INTRODUCTION.

In the present report are recorded the results of observations made by the writer on the fur-seal rookeries of the Pribilof Islands, Alaska, during the summer of 1895, in continuation of the annual inquiries respecting that subject, beginning with the season of 1892. It is accompanied by 11 charts and 42 photographic views, duplicating those of previous years—the former indicating the outlines of the breeding grounds and those of the hauling grounds in part, the latter illustrating the condition of the more important portions of each rookery at the height of the breeding season. The stations from which the photographs were taken are the same as those previously occupied for that purpose, while the dates of both the charts and photographs correspond as closely with those of preceding years as the conditions of weather permitted or other circumstances, explained below, made advisable.

PRIBILOF ISLANDS.

The steamer *Albatross* first reached St. Paul Island, of the Pribilof group, on June 24, 1895, being then en route to the Commander Islands, Siberia, and remained at the former place until noon of the 26th. Mr. F. W. True, curator of mammals in the United States National Museum, together with an assistant, was landed on St. Paul Island for the purpose of making a series of independent observations respecting the rookeries, as was also Mr. N. B. Miller, assistant on the *Albatross*, the latter being provided with the necessary outfit for beginning upon the season's photographic work in case of any unforeseen delay in the return of the ship.

I spent the 25th and the forenoon of the 26th in going over the rookeries of Lukannon, Ketavie, Reef, Lagoon, and Tolstoi. Female seals were scarce, none being observed on any of the rookeries at a distance of more than 50 or 60 feet from high-water mark, although the usual rookery area was occupied by bulls. The harems in course of formation along the beaches were as yet very small, the average number of females to each being five. About one-fourth of the females were nursing new-born pups, the others being conspicuously gravid. Some sections of rookery ground were still covered with snow and a number of new-born young with the red placentæ still attached were lying upon the snow. Occasional females were noticed arriving from the sea, but none were seen leaving. There were no signs of any then coming into heat. A hasty count by harems of females and young at two favorable points resulted as follows:

Lukannon.—10 females, 5 pups; 2 females, 1 pup; 15 females, 2 pups; 4 females, 1 pup; 9 females, 4 pups; 9 females, 3 pups.

Ketavie.—14 females, 6 pups; 6 females, 1 pup; 8 females, 2 pups; 7 females, 4 pups; 10 females, 3 pups; 10 females, 2 pups; 8 females, 3 pups; 5 females, 1 pup.

The hauling grounds were fairly well occupied. A drive was made from Reef rookery on the morning of the 25th, about 1,200 being killed. At 1 p. m. the rejected seals had in large part returned to Zoltoi Neck, from which they had been driven, and were hauled out nearly all the way across. A drive of about 1,000 seals from Polavina rookery was made on the 26th, from which about 700 were killed.

COMMANDER ISLANDS.

The *Albatross* sailed at noon on June 26 for Bering Island, Siberia, where we arrived on July 3. Dr. Leonhard Stejneger, curator in the United States National Museum, was landed for the season, in order to study the condition of the seal rookeries and the habits of the Commander Island seals, respecting which he made an important series of observations during the years 1882 and 1883. The 4th was spent in visiting North rookery, 12 miles distant from Nikolski village, the trip being made on dog sleds furnished by Governor Grebnitzky. Although the weather was not clear, I succeeded in making highly satisfactory panoramas of the rookery, which lies in two sections, separated by a space of about three-fourths of a mile. The rookery is located at Yushin Point at the extreme northern end of the island. The larger section of the rookery occupies a flat, reef-like peninsula, the smaller being on the beach to the southwestward. Very few bachelors were present, and these were scattered so close to the breeding seals that distinct hauling grounds were not apparent. The breeding seals were very densely packed upon their respective areas, a large portion of the females having brought forth their young. The latter were beginning to collect into groups by themselves, and the females were rapidly coming in heat.

North rookery, the most important of the four rookeries on the Commander Islands, I estimated to be of about the same size and importance as Tolstoi rookery on the Pribilof Islands. With but one other rookery approaching it in size, it is evident that the seal fishery of the Commander Islands is of very moderate value as compared with that of the Pribilof Islands, while it is certain that there is at present no such supply of seals as would be necessary for the maintenance of the large fleet of vessels now operating upon this herd during its migrations between Bering Sea and the coast of Japan.

The positions where seals were taken by pelagic sealers during the season of 1895 in the waters adjacent to the Commander Islands were for the most part to the eastward, southward, and westward of the islands, within a radius of 100 miles, the catch of one vessel having been made off Cape Nagikinsky, 200 miles to the northwest. The data are derived from the log books of 5 American vessels whose catches aggregate 714 seals, taken between July 5 and September 4. In the year 1892 the schooner *Henry Dennis* made a catch of 563 seals between July 2 and August 28 in these waters, all seals being taken within 170 miles of the islands. The sex of seals taken is not stated. The total number of seals obtained by the combined Canadian and American fleets off the Russian coast during the season was 7,648, the positions where seals were taken by Canadian vessels not being at hand.

During the season of 1895 a sealing fleet numbering 45 vessels took 38,732 seals belonging to the Commander Islands herd, along the coasts of Japan and Russia. To this number should be added the catch made by a small fleet of a dozen or more vessels belonging to Japan, of which we have received no record. The Japan and Russian catch for the season is considered small, and would have been unprofitable but for a shortage in the total pelagic catch and a consequent advance in the price of seal skins.

PRIBILOF ISLANDS.

The *Albatross* returned to St. Paul Island on July 9, when I took up my quarters on shore for the season.

Resuming the observations left off in June, the rookeries of Lukannon, Ketavie, Lagoon, Tolstoi, and a portion of Reef rookery were examined very minutely and the breeding females occupying them carefully counted. This work, with brief visits to all the other rookeries, occupied the time until the 16th, when Ketavie and Lukannon rookeries were visited for chart data. On the 17th we went to St. George Island, where all the rookeries were photographed and their areas platted on the charts during the 18th and 19th. Returning to St. Paul Island on the 20th, the chart and photographic work was taken up and pushed rapidly to completion, the charts being finished on the 24th and the photographic series on the 27th.

From this date until August 9 I was engaged in making natural history observations on the rookeries, and in setting up artificial landmarks to outline the present limits of the rookeries and serve as guides for their delineation in future.

The latter work consisted in painting on suitable bowlders, in white lead, large crosses (+) that would be conspicuous from the photographic stations, and would appear in the panoramas that might be made hereafter. These crosses, placed on Northeast Point, Polavina, Reef, Tolstoi, and Upper Zapadnie rookeries, on St. Paul Island, and on Zapadnie rookery on St. George Island, were located with reference to the limits of the breeding grounds or the points where seals were massed.

On Northeast Point rookery four crosses, visible from Station 5, mark the rear limits of the principal masses of seals.

On Polavina rookery four crosses mark the limits—two on each side of Station G.

On Reef rookery five crosses from stations 17 to 18, mark limits or masses.

On Tolstoi rookery five crosses mark limits.

On Upper Zapadnie rookery six crosses mark limits or masses.

On Zapadnie (St. George Island) a cross marks the extreme western end of the rookery.

It seems advisable to have these artificial landmarks extended to some of the other rookeries and located on their respective charts.

Photographic Station G, on Polavina, was marked F by mistake and should be corrected.

Photographic Station 5, on Northeast Point, was appropriately marked.

CONDITION OF ROOKERIES IN 1895 AS SHOWN BY CHARTS AND PHOTOGRAPHS.

The changes that have taken place in the rookeries since July, 1894, are so marked that their depleted condition in July, 1895, is in general apparent upon comparison of the charts and photographs covering the two seasons. The usual number of seals not having appeared at the customary time of commencing the photographic work, the latter was purposely delayed in order that the ground might have ample time to fill up, the dates at which the photographs were made being mostly a week later than in 1894. Even after the slight spreading of the breeding seals that takes place as the season advances, the grounds were not at any time during 1895 occupied by their usual numbers of seals. Rookeries, or breeding grounds, strictly speaking, are the tracts within the limits of which young seals are brought forth, being perfectly distinct areas as contrasted with those over which they spread of their own accord somewhat later. The "spreading" which results from the swelling of the rookeries by the birth of thousands of young was scarcely perceptible during the season of 1895, the limited number of adults on the rookeries making it unnecessary for the animals to scatter to the usual distances from the beaches. Many old breeding males occupied their former positions in the rear of the rookeries, but remained alone, or with but two or three females during the season, their harems having been absorbed by harems nearer the beach and not permitted to pass back. Many of the branches of rookeries formerly extending well back of the breeding grounds at favorable points where the seals lie in masses have this year been absorbed into the main body of breeding seals. These changes are shown in the photographs of some of the rookeries and are represented on the charts. In many narrow rookeries stretched along beaches where the number of seals is not great, changes caused by a decrease in seal life are not of such a character as to be apparent in photographs until actual breaks occur. All such rookeries confined to narrow beach slopes are now thinned out to the verge of breaking apart in many places. They no longer overlap on to the level ground usually found above the slopes, and the surplus of male seals derived from their adjacent hauling grounds is no longer of any importance. Breaks which occur in rookeries are always carefully noted, as they are sure indications of decrease in the seal life of rookeries heretofore continuous. Certain thin sections as observed in 1894 indicated breaks likely to follow further decrease in seal life. As a result of the heavy loss of female and young seals caused by pelagic sealing in Bering Sea in 1894, many of the predicted breaks actually occurred in 1895. The destruction of a much larger number of females and young, through the operations of the sealing fleet in Bering Sea in 1895, will cause a reduction in the class of breeding seals next season, amounting practically to the loss of continuity in all the thin rookeries on the islands and rendering the business of pelagic sealing unprofitable.

The thinning out of the breeding seals and the consequent recedence of the breeding limits toward the beaches is followed by the encroachment of grass upon the bare ground but recently occupied by seals. Attention is called to a series of photographs taken annually which are illustrative of this feature.

It is impossible to represent satisfactorily the decrease of the rookeries by photographs or charts. The former are limited in number and have frequently to be taken from unfavorable points, while the reduction of a great tract more or less occupied by seals to the limits of a small photograph is often misleading except to those familiar with the ground. The case of the charts is similar, the changes in extensive areas of land not being impressive when indicated upon charts of small scale. Special attention is called, however, to the large panoramas taken from Stations 5, 17, and G, showing the large rookeries of Northeast Point, Polavina, and Reef. In all of these very comprehensive views the decrease in the number of seals and the withdrawal of the breeding limits toward the sea front is apparent.

ST. PAUL ISLAND.

Northeast Point rookery.—The thin patches of seals upon each side of Sea Lion Point are reduced in numbers and area. From station 6 to the point two important breaks occur at points opposite the marshes. From the point to Station 5 the rookery has visibly narrowed and the seals have decreased in numbers. From Hutchinson Hill one of the most important changes of the year is visible. The photograph from Station 5 shows the wide rookery ground to be narrower than ever before. At only one point were young seals born as far back as the base of the hill. At Station 4 the change is amply shown by the photograph, which, although taken eleven days later than in 1894, shows no indication of seals spreading to their former limits. South of Station 4 the seals for the first time failed to cover an important tract extending back in the direction of Hutchinson Hill. This is shown in the photograph from Station 3. The animals usually somewhat massed at this point have found room upon the immediate beach slope. From Station 3 to Station 1 the breeding seals are confined to the narrow beach slope, very difficult of examination. Here the rookery is exceedingly thin, which is indicated to a slight degree in rather unsatisfactory photographs. The decrease in the number of seals at this great rookery since 1894 is very marked.

Polavina rookery.—The main rookery, situated on a comparatively level tract, is shrunken perhaps 50 per cent in dimensions, and at no point extends back to the limits of 1894. The small communities occupying the ledges under the cliffs north of the point were much reduced in numbers, and with the exception of a few stragglers did not overlap on the plateau above. The photograph of the main rookery, taken at short range, shows the breeding line to have receded toward the beach, while the level ground at the left remained unoccupied. Another view from Station 21, at still shorter range, shows a loss of seals from the foreground and extreme background.

At Little Polavina rookery the branches of the rookery extending back on the plateau have been absorbed, while the remnant along the cliff is thinned and lies in patches. Foggy weather prevented satisfactory photographic work.

Lukannon rookery.—The breeding line here was drawn somewhat lower than usual, and at no time during the season were the seals hauled back to the customary limits. For the first time during my observations of this ground no young were born on the hill above Station 12. Photograph 26 is useless for comparison, the breeding seals being altogether in the dim background to the left. The eastern two-thirds of Lukannon rookery was counted on July 12; it contained 1,840 females.

Ketavie rookery.—Now thinner than ever before. It is broken apart in many places. All the young born this season were on the lower ledges, and there was no seasonal spreading back whatever. The ground is easily commanded, and a careful count was made. There were only 2,070 females between Station 12 and Ketavie Point. Photograph 13 shows a reduced tract, with bulls in the rear that were unable to form harems in 1895. The other photographs of Ketavie show a decrease.

Reef rookery.—A comparison of the charts and photographs of this ground for the seasons of 1894 and 1895 will show in a measure the change for the worse that has taken place. Photograph 16 shows the recedence of seals on the hill slope toward the water's edge. Photograph 17 shows a recedence toward the sea and a very distinct decrease. The great extent of this panorama is more graphically indicated on the chart (east of Station 17). No. 18 shows the recedence of the seal belt resulting from diminished numbers and the consequent isolation of old bulls on breeding ground no longer reached by females. No. 19 shows a recedence from the higher ground. No. 20 shows a reduction and a recedence toward the water. The photograph of the grass area on this rookery is especially interesting as proving the rapidity with which grass takes possession of ground which a few years back was teeming with seals. This area, devoid of grass in July, 1892, was selected and marked at that time for annual observation. Being now well grass-grown, as the photograph proves, it is valuable as showing the rapidity with which grass grows on ground recently vacated by seals, a fact denied at some length by the British Bering Sea commissioners (see British Counter Case, Fur Seal Arbitration, Ex. Doc. 177, part 8, p. 504). Not only has the area marked by cairns become grass-grown, but the entire tract between the rookeries is now a continuous meadow covered with weeds and flowers.

Lagoon rookery.—Here there has been a perceptible shrinkage at the ends. The photograph shows how the west end is breaking apart into small harems. This long and thin rookery may be expected to illustrate next season the damage that will surely result from the past season's loss of females and young. When counted on July 11, the whole area contained 1,268 female seals.

Tolstoi rookery.—This rookery has diminished very perceptibly. Photograph F shows that the seals no longer ascend the hill and surround the large bowlder on the extreme left, while photograph 11 shows a thinning out in the foreground and a recedence from the left end. Allowance should be made for a change in the shape of the bay itself, a hundred feet or more of sand having filled in the bight at the left end of the rookery. A pencil line on photograph 11 shows the true bearing of the camera. The number of female seals along the narrow beach from the dotted line toward the point at the right (see photograph 11) was 1,520 on July 11, 1895.

Lower Zapadnie.—Photograph 7 is too dim for comparison. Photograph 7^a, although made at long range, indicates a decrease. In photograph 8^a, the camera having been wrongly placed, comparison with the preceding year is unfavorable, but diminished numbers are indicated. Lower Zapadnie is greatly reduced since 1894.

Upper Zapadnie.—The view from Station 8 is too distant for satisfactory comparison, but reduced numbers are apparent. In photographs 9 and 10 it will be noticed that some old bulls in the rear of the rookeries were unable to form harems, and in photograph 10 the continuity of the patch of seals near the sea is broken. In general there has been a shrinkage in territory and a marked reduction in numbers.

ST. GEORGE ISLAND.

North rookery.—Photograph 2 illustrates, on a small scale, the absorption of the small harems in the rear into the main body of the rookery nearer the sea—the result of lessened numbers. This ground, when counted July 18, contained 110 females.

Little East rookery.—There is here a decrease and a shrinkage in area, indicated to some extent in the photograph.

East rookery.—A very perceptible reduction in numbers.

Starry Arteel rookery.—A great reduction in numbers, with consequent abandonment of the high ground in the rear.

Zapadnie rookery.—The change here is shown on the chart. The rookery has diminished in numbers and extent. The present condition of the rookery is well shown by a new photograph from Station H.

List of the charts showing the outlines of the rookeries on the Pribilof Islands, July, 1895.

ST. PAUL ISLAND.

Northeast Point rookery	July 24, Chart A
Polavina rookery	July 24, Chart B
Ketavie and Lukannon rookeries	July 16, Chart C
Reef and Garbotch rookeries	July 21, Chart D
Tolstoi and Lagoon rookeries	July 23, Chart E
Zapadnie and English Bay rookeries	July 20, Charts F and G

ST. GEORGE ISLAND.

Starry Arteel rookery	July 19, Chart H
North rookery	July 18, Chart I
East and Little East rookeries	July 18, Chart J
Zapadnie rookery	July 19, Chart K

List of the photographs of the seal rookeries on the Pribilof Islands taken in July, 1895, by N. B. Miller and C. H. Townsend, showing the dates on which they were made.

ST. GEORGE ISLAND.

Starry Arteel rookery	July 18 (N. B. M.)
North rookery	July 18 (N. B. M.)
Little East rookery	July 18 (N. B. M.)
East rookery	July 18 (N. B. M.)
Zapadnie rookery	July 19 (C. H. T.)

ST. PAUL ISLAND.

Northeast Point rookery	July 24 (C. H. T.)
Little Polavina rookery	July 24 (C. H. T.)
Polavina rookery	July 26 (N. B. M.)
Lukannon rookery	July 20 (N. B. M.)
Ketavie rookery	July 20 (N. B. M.)
Reef rookery	July 20 (N. B. M.)
Lagoon rookery	July 27 (C. H. T.)
Tolstoi rookery	July 24 (N. B. M.)
Lower Zapadnie rookery	July 20 (C. H. T.)
Zapadnie rookery	July 20 (C. H. T.)

NUMBER OF BREEDING FEMALES ON THE ISLANDS.

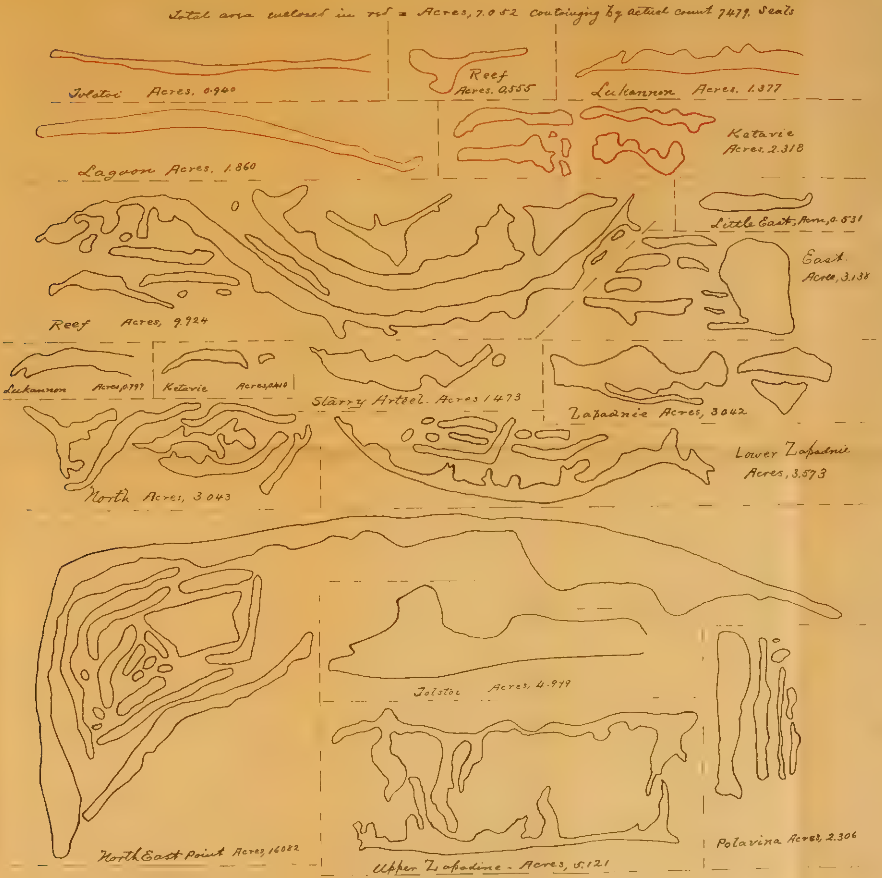
Upon the return of the *Albatross* to the Pribilof Islands on July 9, 1895, a general examination of the rookeries was made. Some of the narrower breeding grounds were so thinly covered with seals that it seemed quite possible to count them. Accordingly, Mr. True and I began on Ketavie rookery and on the 9th and 10th succeeded in taking a satisfactory census. The harems seemed full and well defined, no coalescing having begun, and they were therefore counted separately. This work was continued with Lagoon rookery and portions of Tolstoi, Lukannon, and Reef rookeries, where female seals were counted as follows: Ketavie, 2,218; Lukannon, 1,940; Lagoon, 1,216; Tolstoi, 1,539; Reef, 566. The whole number counted was 7,479.

Narrow places limited to the beach slope, like Lagoon rookery, were not difficult to count from a boat when the sea was smooth, while no trouble was encountered in doing the same with thin rookeries that could be viewed from low cliffs. The value of the data secured can not be overestimated, it being the first time that rookeries were found sufficiently reduced in the number of breeding females to admit of their numbers being determined with any degree of precision. Although these rookeries may not have quite reached their breeding height, they were so near to it that the corrections to be applied are unimportant. With a very fair set of figures for the extensive area thus examined, we are able to form a more accurate estimate of the number of breeding females on the Pribilof Islands than ever before. Adopting the scale of the rookery charts prepared by Mr. J. Stanley-Brown (264 feet to 1 inch) we find the 7,479 seals counted to be distributed over 7.05 acres, making 1,061 seals to the acre. The remaining area occupied by seals has been computed at 54.47 acres, as based upon the rookery ground delineated on the charts for 1895. The result is a total of 65,239 breeding females for all the rookeries of the two islands. Some corrections might be applied for certain tracts on Reef, Tolstoi, and Northeast Point rookeries, where the seals always lie more or less massed, but I can not admit that there were between July 10 and 15 more than 75,000 breeding females present upon the islands. There is also a correction to be applied for a moderate number of females not on the rookeries at the time the breeding females were being counted. As the season was backward, and the females later than usual in arriving, their appearance was made en masse, so it is altogether probable that the number of absentees was not important.

From the 10th to the 15th of July the rookeries were filled with females that had just brought forth their young. They had not noticeably begun going to sea to feed, and at no other time were so many coming in heat. It is altogether unlikely that any very important number of females could have been away from the rookeries at a time when the females were still in excess of young. Mr. True found the percentage of young to be 62 on July 9, while on July 20 the young were everywhere in excess of females. Later in the season 50 per cent, at least, of the females were customarily absent from the rookeries.

Diagram showing Area of the breeding grounds of Fur Seals on the Pribilof Islands, season of 1895, to illustrate the computation of number of Female seals on the rookeries. Scale 264 Feet=1 inch.

The number of Females was counted on the areas outlined in red, and was estimated on the same basis for the remaining areas.



Area in red = 7.052 acres, containing by actual count 7,479 seals
" " black = 54.489 " " " Computation 57,760 "
Total breeding Females 65,239

Census of Ketavie rookery, by harems, from North End to Ketavie Point, on July 9 and 10.

[The numbers indicate breeding females in each harem.]

14	34	75	42	1	1	10	37	14	3
7	1	1	3	14	8	32	22	2	18
15	12	1	4	88	13	14	24	27	10
60	5	5	9	31	12	12	22	11	13
40	13	6	26	23	35	17	15	25	21
10	16	11	34	5	1	21	3	27	10
8	52	1	2	27	10	13	2	22	5
8	1	18	15	43	29	13	10	18	55
23	5	50	9	1	1	4	16	34	1
24	47	21	21	29	3	9	10	3	1
28	13	17	12	145	15	13	2	10	2
43	13	23	20	64	8	16	6	23	

Whole number of breeding females	2,218
Whole number of harems	119
Average females to harem	18 —

Census of Lagoon rookery, by harems, on July 10.

[The numbers indicate breeding females in each harem.]

8	32	18	2	19	4	5	31	19	16
9	20	31	24	1	15	2	20	1	20
38	16	8	26	23	35	16	6	3	12
12	16	4	28	4	23	6	7	67	1
4	41	37	7	67	14	9	14	20	2
16	21	4	42	48	4	26	1	25	4
1	4	1	7	39	3	10	4	18	15
1	8	1	3	24	16	22	10	25	41

Whole number of breeding females	1,216
Whole number of harems	80
Average females to harem	15+

Census of Tolstoi rookery, by harems, from the Point to end of Grass Bluff, on July 11.

[The numbers indicate breeding females in each harem.]

7	9	12	7	8	15	4	14	3	10
8	16	20	12	24	13	10	12	1	1
1	4	16	16	15	31	18	17	15	1
1	10	9	6	1	13	20	15	10	34
8	19	15	1	11	18	26	4	20	1
29	3	14	3	2	25	16	3	26	28
2	9	24	27	1	11	45	8	7	1
45	4	20	42	6	1	21	5	2	29
1	6	11	1	1	9	1	22	51	17
15	3	32	3	37	25	6	23	15	5
18	5	47	24	11	18	10	31	13	31
1	4	1							

Whole number of breeding females	1,539
Whole number of harems	113
Average females to harem	13+

Census of Lukannon rookery, by harems, from bluff to ledge of flat rocks, on July 12.

[The numbers indicate breeding females in each harem.]

26	35	13	12	3	10	9	5	39	18
27	1	5	51	5	16	9	55	1	9
14	27	31	6	26	9	21	3	48	35
44	46	14	16	34	1	2	54	17	40
1	19	2	68	25	10	17	40	8	11
32	6	21	45	7	10	1	68	30	24
45	70	22	53	7	18	21	16	12	3
38	62	28	3	21	9	5	2	3	35
5	2	36	13	13	11	19	12	74	

Whole number of breeding females	1,940
Whole number of harems	89
Average females to harem	21+

Census, by harems, of a portion of Reef rookery, below bluff north of Station 19, on July 15.

[The numbers indicate breeding females in each harem.]

12	14	2	31	7	13	9	74	14	5	20
9	10	4	16	25	11	16	16	1	21	14
4	9	4	37	8	14	90	9	55	1	1

Whole number of breeding females	566
Whole number of harems	33
Average females to harem	17
Whole number of breeding females counted on Ketavie, Lukannon, Tolstoi, Lagoon, and Reef rookeries	7,479
Whole number of harems	434
Average females to harem	17+

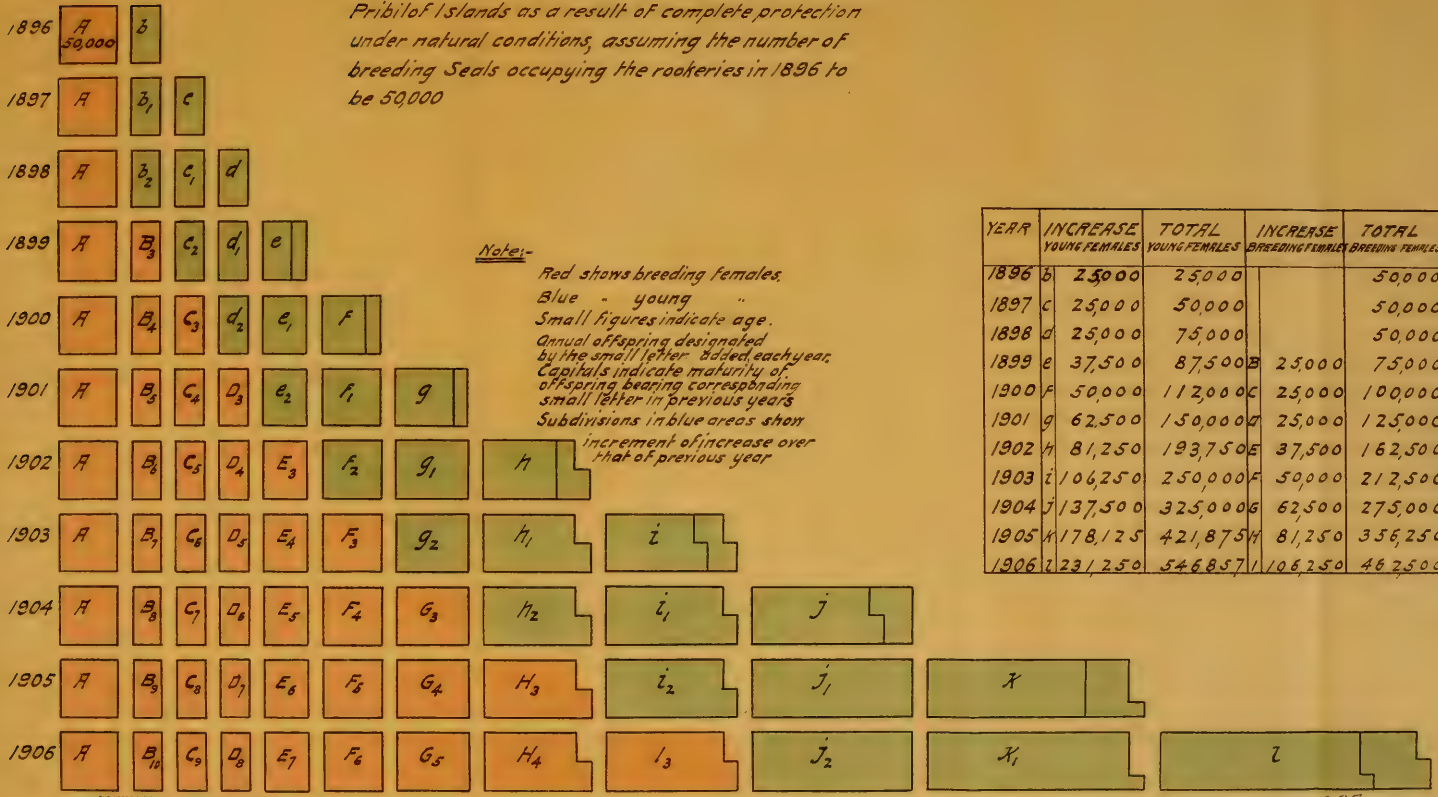
RESTORATION OF THE ROOKERIES.

With the number of breeding females in the Pribilof seal herd diminished to about 75,000 in July, 1895, and this number further reduced by the pelagic loss of August and September (certainly not less than 30,000 females out of the catch of nearly 44,000), we have remaining a very limited breeding stock, and yet, notwithstanding this circumstance, if absolute protection can be guaranteed to the seals without delay and for a term of years, the stock is still large enough to insure a comparatively rapid restoration of the rookeries. If there be no further loss of females during the present winter by sealing on the Northwest Coast, we may fully expect to find the rookeries in 1896 occupied by the present number of breeding females, about 45,000, together with several thousand 3-year-old females that will then become breeders. It is exceedingly difficult to calculate the increase of 3-year-old breeding females for that time, there being no record of the proportion of 2 and 3 year old females lost during the pelagic sealing of the past two seasons. It is evident that the loss of over 50,000 pups in 1894–95 will result in a poor showing of breeding females in 1897–98. Supposing, however, that the existing breeding females, with their female progeny, were secured against destruction in future, the restoration of the rookeries would be certain, and the rate of increase more rapid from year to year.

The following table showing the increase in seal life that would naturally result from the complete protection of females is based upon the natural-history facts that they breed annually from the third year and produce both sexes in equal numbers. The loss from natural causes, such as old age, injuries received on the rookeries, killer whales, etc., is probably unimportant.

Assuming a breeding class of 50,000 seals in 1896, there is shown an increase to nearly half a million in ten years, while at the end of twenty years the breeding females alone number over 6,500,000. The annual increase of young males would be equal to the annual increase of young females, or to half the breeding females. A very small proportion of these being required for breeding purposes, this class would practically be available annually as a surplus. Not only do seals breed early in life, and with great regularity, but they return to their breeding grounds with a faithfulness which demonstrates the security they feel there. The seal rookeries of the Pribilof Islands can, therefore, unquestionably be restored, and at a known ratio of increase. These figures may appear startling, but they are founded on simple natural-history facts.

Diagram illustrating the rate of increase of female seals that might be expected to take place on the Pribilof Islands as a result of complete protection under natural conditions, assuming the number of breeding Seals occupying the rookeries in 1896 to be 50,000


1896 A 50,000 b
1897 A b_1 c
1898 A b_2 c_1 d
1899 A B_3 c_2 d_1 e
1900 A B_4 C_3 d_2 e_1 f
1901 A B_5 C_4 D_3 e_2 f_1 g
1902 A B_6 C_5 D_4 E_3 f_2 g_1 h
1903 A B_7 C_6 D_5 E_4 F_3 g_2 h_1 i
1904 A B_8 C_7 D_6 E_5 F_4 G_3 h_2 i_1 j
1905 A B_9 C_8 D_7 E_6 F_5 G_4 H_3 i_2 j_1 k
1906 A B_{10} C_9 D_8 E_7 F_6 G_5 H_4 I_3 J_2 K_1 l

Note:-

Red shows breeding females.
Blue " young "
Small figures indicate age.
Annual offspring designated by the small letter added each year.
Capitals indicate maturity of offspring bearing corresponding small letter in previous years
Subdivisions in blue areas show increment of increase over that of previous year

YEAR		INCREASE YOUNG FEMALES	TOTAL YOUNG FEMALES		INCREASE BREEDING FEMALES	TOTAL BREEDING FEMALES
1896	b	25,000	25,000			50,000
1897	c	25,000	50,000			50,000
1898	d	25,000	75,000			50,000
1899	e	37,500	87,500	B	25,000	75,000
1900	f	50,000	112,000	C	25,000	100,000
1901	g	62,500	150,000	D	25,000	125,000
1902	h	81,250	193,750	E	37,500	162,500
1903	i	106,250	250,000	F	50,000	212,500
1904	j	137,500	325,000	G	62,500	275,000
1905	k	178,125	421,875	H	81,250	356,250
1906	l	231,250	546,857	I	106,250	462,500

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Table showing the increase in seal life that would naturally result from the complete protection of the females.

Year.	Breeding females	Annual increase of young females.	Annual increase of breeding females.	Total breeding females.
1896	50,000	25,000	(*a*)	....
1897	50,000	25,000	(*a*)	....
1898	50,000	25,000	(*a*)	....
1899	50,000	37,500	25,000	75,000
1900	75,000	50,000	25,000	100,000
1901	100,000	62,500	25,000	125,000
1902	125,000	81,250	37,500	162,500
1903	162,500	106,250	50,000	212,500
1904	212,500	137,500	62,500	275,000
1905	275,000	178,125	81,250	356,250
1906	356,250	231,250	106,250	462,500
1907	462,500	300,000	137,500	600,000
1908	600,000	389.062	178,000	778,125
1909	778,125	504,687	231,250	1,009,375
1910	1,009,375	654,687	300,000	1,309,375
1911	1,309,375	844,718	389,062	1,689,437
1912	1,689,437	1,097,062	504,687	2,194,124
1913	2,194,124	1,424,405	654,887	2,848,811
1914	2,848,811	1,846,764	844,718	3,693,529
1915	3,693,529	2,395,295	1,097,062	4,790,591
1916	4,790,591	2,818,677	1,846,764	6,637,355

a Available as breeders at third year.

LOSS OF YOUNG SEALS BY STARVATION.

The steamer *Albatross* having left Bering Sea in 1895 somewhat earlier than usual, I did not visit the rookeries on the Pribilof Islands in September to repeat the observations made by me at the same season in 1894, respecting the loss of young seals resulting from pelagic sealing. Arrangements were made, however, with the resident Treasury agents for a full and explicit report as to the extent of the damage that was certain to result from the presence of a large sealing fleet in Bering Sea during the breeding season. Such report, recently forwarded by Messrs. Adams and Judge, the resident agents of the Treasury Department in charge, gives the number of dead pups upon each rookery to October 10, the total loss of young seals for both islands up to that time amounting to 28,066. Many weak and emaciated pups were observed on all the rookeries, and these have doubtless since died. Pup seals are very fat and can not be killed by starvation in less than a month's time. Although many thousands of young seals were lost by starvation in September and October, 1894, on account of sealing done in August, I found no dead pups until after September 1. From that time on, the death of the young was continuous.

The following summation of the loss for 1895 is accompanied by affidavits as to the correctness of the counts made:

Loss of young seals on the Pribilof Islands by starvation resulting from the killing of female seals in Bering Sea in 1895.

[Count in full to October 10, 1895.]

ST. PAUL ISLAND.

Ketavie rookery	857
Lukannon rookery	1,347
Lagoon rookery	300
Polavina rookery	1,970
Garbotch rookery	1,514
Reef rookery	3,376
Upper Zapadnie rookery	5,231
Lower Zapadnie rookery	381
Tolstoi rookery	2,582
Northeast Point rookery	4,017
Sea Lion Rock rookery	361
Total	22,054

ST. GEORGE ISLAND.

Zapadnie rookery	2,083
North rookery	1,559
Starry Arteel rookery	1,131
East rookery	986
Little East rookery	253
Total	6,012
	22,054
Grand total	28,066

Twenty dead bulls and 101 dead females were found on St. Paul Island during the season of 1895, 3 of the latter having spear points and lines attached.

The total number of seals taken in Bering Sea during the season by the pelagic sealing fleet was 43,697. There can be no doubt that at least 75 per cent of those were breeding females, the death of which would necessarily involve the loss of over 32,000 young. The proportion of the sexes represented in the season's catch, as reported by the sealing fleet, is untrustworthy, judging from our experience with reports of this kind in the past and from what we know at present of the actual conditions.

RECOMMENDATIONS RESPECTING THE PRIBILOF ISLANDS.

Having already questioned the propriety of the driving and culling of seals by the lessees upon the islands, it is unnecessary to repeat the arguments against the practice. No further culling should be permitted. It would be preferable to kill a larger quota consisting of several grades of skins, taking all that might be driven, rather than to continue the selection of a single grade necessitating the excessive handling of the animals now practiced.

Should a sealing fleet be present in Bering Sea during the season of 1896, the removal of all surplus males, except yearlings and large bulls, would be desirable. While increasing the quota of Government skins and lowering the value of the pelagic catch, it would also have the effect of limiting the pelagic catch entirely to females. The number of females is now so limited that no profit will be found in taking them at sea, where they will be so scattered as to discourage pelagic sealers and to some extent shorten the season of their operations.

Another method, suggested by Mr. F. W. True, of reducing the pelagic catch to an appreciable degree might be found in retaining all nonbreeding males upon the islands after August 1. Commencing about the 20th of July, all males appearing upon the hauling grounds, and rejected from the drives, could be placed in the larger inland lakes and held captive there for six weeks or more. A solution of the pelagic sealing question might be found in the branding of nursing females in such a manner as would destroy the value of skins, while the question of property recognition upon the high seas might be well worth raising.

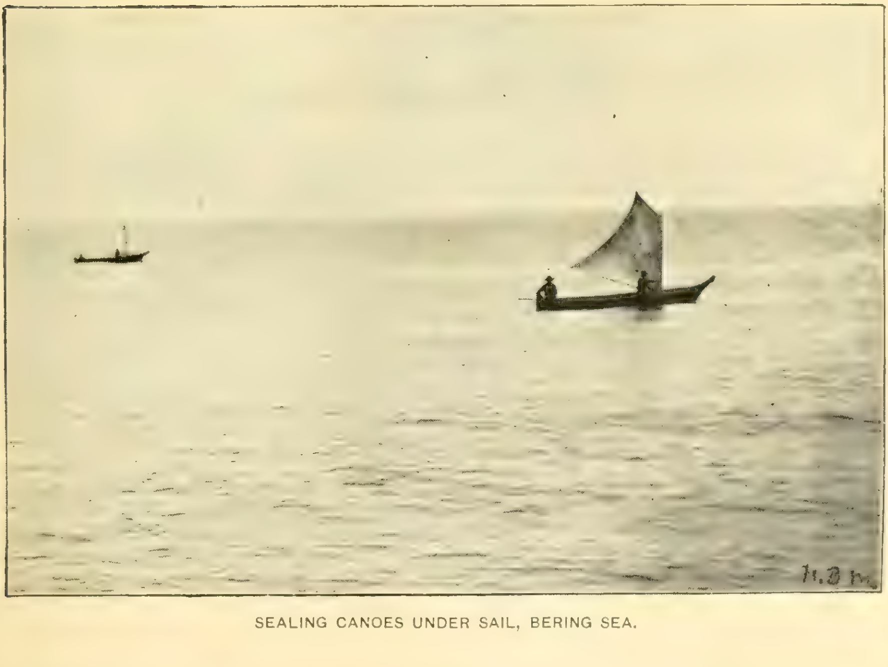
Any action on the part of the authorities directed toward the killing of female seals on the rookeries, for any purpose whatsoever, would be deplorable. Nothing can justify the destruction of the source of supply of anything useful to mankind.

REPORT ON PELAGIC SEALING IN 1895.

The following report embraces the results of observations made at sea between August 9 and 30, 1895, in connection with the fishery investigations of the Fish Commission steamer *Albatross*, and subsequently at Victoria, British Columbia, Seattle and Port Townsend, Wash., between September 25 and October 18. The work at sea consisted in boarding such vessels as were met with for the purpose of making inquiries as to the number of seals taken, the positions where taken, their sex, age, food, etc.

The perfecting of United States customs regulations providing for the collecting of sealing data by American vessels left comparatively little work to be done at sea. The examination of a considerable num-

CANADIAN SEALING SCHOONER E. B. MARVIN, BERING SEA.



SEALING CANOES UNDER SAIL, BERING SEA.

ber of carcasses of fur seals procured from sealing vessels during the month of August indicated that the species breed annually from the third year. It also yielded information on the sex of seals taken at sea and the character of their food, which appears to be pollock, squid, small fishes, and other surface life chiefly.

Upon the return of the *Albatross* to Puget Sound, I began boarding the vessels of the sealing fleet as fast as they returned. The catch for the year on the different sealing grounds was ascertained, and a number of log books kept during former sealing voyages and containing information on the seasonal migrations of the fur seal were collected.

During the months of August and September, 1895, there were engaged in sealing in Bering Sea 39 Canadian and 18 American vessels, the former making a catch of 35,773, and the latter a catch of 7,924 seals.

During the same period in 1894 a fleet of 38 vessels took 31,542 seals, while the total Bering Sea catch for 1895 (43,697 seals) required a fleet of 57 vessels, making a lower average per vessel, although a comparison of the log books of the American fleet for the two seasons shows the sealing weather to have averaged better in 1895, seals having been taken every day during the month of August.

The total number of Canadian and American vessels that engaged in pelagic sealing during the year was 96. The catch of seals from the Pribilof herd was 55,664, and that from the Russian herd 38,732, the total being 94,396. Less than one-third of the entire catch was made by American vessels, while the proportion of the American catch in Bering Sea is comparatively insignificant, the bulk of the American catch for the year having been made on the Japan coast.

The operations of the sealing fleet in Bering Sea in 1895 were in the same locality as in 1894, the catch as a whole having been made southeast, south, southwest, and west of the Pribilof Islands, outside the protected zone.

The sealing ground, platted upon a map prepared from positions obtained from a large number of sealing vessels, appears as a nearly semicircular belt about 60 miles in width, commencing to the northwestward of the Pribilofs and extending southward and eastward around the protected area, widening somewhat toward the southeastward limit, where seals were taken nearer the Aleutian Islands.

The condition of the American seal herd is now very critical. Should no changes be made during the present winter affecting the work of the great pelagic sealing fleet, the herd breeding on the Pribilof Islands will, by reason of sealing in Bering Sea during the coming season, be reduced to a comparatively insignificant size, so small, at least, as to ruin the seal fishery commercially at sea as well as upon land.

At a meeting of Canadian sealers recently held at Victoria it was decided that but one cruise be made during the year 1896, that to be in Bering Sea. The Northwest coast catch for the spring of 1895 proved unprofitable, but one vessel having made expenses, while the catch in Japanese and Russian waters was made barely remunerative by reason of an advance in the price of seal skins. This action on the part of the sealers is clearly the result of diminished catches. It is now evident to all persons interested in the pelagic sealing industry that further profit can not be expected from sealing in the North Pacific. That the sealing fleet as a whole after one more season's work in Bering Sea will be out of employment can not be doubted.

The condition of the seal herd breeding upon the Commander Islands is similar to that of the American herd. With the inauguration of the restrictions of the modus vivendi, the destructive operations of the pelagic sealing fleet, so long directed chiefly against the American herd, were suddenly transferred to the Russian herd, and from that time its decimation has been rapid, the slaughter extending annually, from the latitude of Yokohama, in winter, to within 30 miles of the Commander Islands, in summer. The catch for 25 Canadian vessels in 1895 was 18,686 skins, as compared with a catch of 56,430 skins in 1894 by the same number of Canadian vessels. The total pelagic catch from the Russian herd for 1895 was only 38,732 as compared with a catch of about 82,000 in 1894.

A minute inspection of the rookeries on the Commander Islands during the past season revealed such a reduction in the breeding portion of the seal herd as to render immediate restrictions on pelagic sealing necessary, if anything more than a mere nucleus of the Russian herd is to be preserved.

PROPORTION OF SEXES IN THE PELAGIC CATCH.

This subject having been commented upon very fully in the report for 1894, further discussion as to the proportion of male and female seals killed by pelagic sealing seems unnecessary. Sealers detecting the danger of restrictions that might follow a discovery of the great preponderance of females in pelagic catches have in numerous cases misrepresented the facts. American inspectors of seal skins have found the reports made by masters of sealing vessels on this point to be subject to correction in cases too numerous to mention. There being no official inspection of the Canadian catch, the reports of masters are necessarily accepted for record. Canadians are the chief offenders, American sealers having in mind the customs inspections that accompany the landing of their catches. The American catch is reported (with custom-house corrections) to consist of three times as many females as males, no vessel reporting more males than females. The Canadian returns represent the numbers as more nearly equal, no official inspection of catches being made, although 11 vessels state their catches as chiefly male.

The following examples illustrate the differences usually found between the reports made by masters of vessels and those made by inspectors of seal skins:

Vessel.	Males.	Females.
Schooner Ecrett:		
Master's report	65	34
Official examination	9	90
Schooner Deeahks:		
Master's report	39	43
Official examination	20	62
Schooner Bering Sea:		
Master's report	76	104
Official examination	35	145
Schooner Matilda:		
Master's report	13	22
Official examination	5	35
Schooner Erland:		
Master's report	83	82
Official examination	33	132

Discrepancies were found in nearly all the log books in the fleet. The skins were identified in the presence of the masters and others, who acquiesced in the identification as they were tallied. In all cases of uncertainty the master's report was given the benefit of the doubt. As a result of the corrections made in the masters' reports of the spring catch for 1895, the records of the Bering Sea catch, made a few months later, were kept more carefully. There being still considerable misrepresentation, masters of vessels, when licensed for sealing, should be cautioned against making incorrect returns, for which the authorities should accept no excuse. The facts of the case are apparent. The skinning of seals in canoes by Indians makes the tally of the sexes of skins thrown on the decks of sealing vessels after nightfall uncertain, while the falsity of all statements of a majority of males is self-evident. It could be demonstrated in many ways. Take, for example, the well-known conditions existing on the Pribilof Islands; the breeding males do not leave the islands—in fact, do not enter the water—during the breeding season, while the surplus males resulting from the polygamous nature of the seal have always been in large part removed by annual killings upon the islands. Females must, therefore, necessarily constitute the great bulk of the pelagic catch. Out of a total of 123 seals examined at random by me upon the decks of sealing vessels in Bering Sea during the past season, 106 were females, or five-sixths of the whole number. The starvation of young seals upon the rookeries that follows the operations of the sealing fleet in Bering Sea is also evidence as to the sex of the seals killed. The loss of young seals up to October 10 is reported to be 28,066 by actual count, while many were then found in a dying condition.[1]

SEX, AGE, PREGNANCY, AND FOOD OF FUR SEALS TAKEN IN BERING SEA DURING AUGUST, 1895.

During the cruise of the steamer *Albatross* on the pelagic sealing grounds in August, 1895, many carcasses of fur seals, obtained from day to day from vessels engaged in sealing, were examined with reference to their age, sex, breeding condition, and food. Such carcasses were readily secured from schooners after the return of the hunting boats, while the evening work of skinning was going on, and all of those obtained were conveyed to the laboratory of the *Albatross* for dissection and examination. Of a total of 123 so examined in different localities from August 11 to 21, 106 were of female seals. Of the latter number 78 were nursing females, all determinations being based on examinations of mammary glands, uteri, and ovaries. Of the remaining females, 26 in number, 15 were yearlings and 11 were 2 years old. Of the males, 17 in number, 2 were yearlings, 4 were 2 years old, 8 were 3 years old, and 3 were 4 years old. Nearly five-sixths of the whole number being females, and nearly four-fifths of these being females in milk, the heavy drain made by pelagic sealing upon the producing class of seals is apparent.

Only one of the 15 yearling females bore signs of recent impregnation, and this one, taken for a yearling on account of its small size, may have been 2 years old. Four of the 2-year-old females were pregnant, one showing the corpus luteum in the right and the others in the left ovary. The breeding season not being over, the other 2-year-old females may have been impregnated later. A few nursing females not bearing marks of present pregnancy may have been impregnated and the corpus luteum not yet developed. From these studies, the first of the kind, it would appear that female fur seals are first impregnated at the age of 2 years, and bear their first young at the age of 3. It is also apparent that nursing females are already pregnant when they begin feeding at sea. In all cases in which the condition of the uteri and ovaries could be made out with certainty it was found that pregnancy occurs annually and in the right and left horns of the uterus alternately. Some of the nursing females examined were, from the appearance of their teeth, judged to be very old. These observations, apparently demonstrating a wonderful regularity in the breeding of the seal, are of special importance in calculating the length of time that would be required for the restoration of the Pribilof rookeries if complete protection could be secured for female seals of all classes.

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[1] As this report goes to press I am officially informed that the sealing schooner *Penelope* on February 29, 1896, entered at San Francisco a catch of 215 seals, of which only 8 were males, all the rest—207—being females. The catch was made from January 24 to February 26, between the Farallone Islands and Point Conception, Cal., at distances averaging 25 miles off shore.—C. H. T., March 12, 1896.

Of 123 stomachs of seals examined, 49 were empty or contained merely abdominal worms or bloody mucus. Of 73 with food, 46 contained chiefly squid, 23 pollock or cod, while 4 contained salmon. The majority had mixed with the squid or larger fishes the bones of very small fishes resembling sand lants or tomcod—perhaps the young of pollock or cod.

These examinations of seals taken off soundings at different times and places indicate that seals find plenty of food beyond the great fishing banks; that squid is the favorite food; that pollock and small fishes come next, while salmon and cod rank last, at least in this part of Bering Sea.

The catches of seals for 1894 and 1895 were made for the most part off soundings.

Table showing the results of observations made on fur seals taken at sea in Bering Sea, August 11 to 21, 1895, respecting sex, age, pregnancy, and food.

SCHOONER M. M. MORRILL.

[Latitude, 55° 12′ north; longitude, 170° 25′ west. Date, August 11.]

Serial number.[a]	Sex.	Age.	Uterus, horn showing former pregnancy.	Ovaries.		Stomach contents.
				Scar resulting from former pregnancy (corpus albicans).	Sign of recent impregnation (corpus luteum).	
	Male	3 years				Small quantity of small fish and squid.
	Female	1 year				Do.
	do	2 years				Do.
	do	1 year				Small quantity of small fish and squid (sand lants?).
	do	Nursing	Right	Right	Left	Small quantity squid beaks.
	do	do	do	do	do	Squid; small fish.
	do	do	Left	Left	Right	Do.
	do	do	Right	Right	Left	Two pollock.
	do	do	Left	(?)	Right	Empty.
	do	do	Right	Right	Left	One squid.
	do	do	do	do	do	Empty.
	do	do	(?)	(?)	do	Squid.
	do	do	Left	Lost	Lost	Empty.
	do	do	do	do	do	Pollock; squid beaks.
	do	do				Empty.
	do	do				Small fish; squid.
	do	do	Right	Right	Left	Small squid.

[a] Serial number used only where specimens were saved.

Table showing the results of observations made on fur seals taken at sea in Bering Sea, August 11 to 21, 1895, respecting sex, age, pregnancy, and food—Continued.

SCHOONER VERA.

[Latitude, 54° 54′ north; longitude, 168° 55′ west. Date, August 12.]

Serial number.[a]	Sex.	Age.	Uterus, horn showing former pregnancy.	Ovaries.		Stomach contents.
				Scar resulting from former pregnancy (corpus albicans).	Sign of recent impregnation (corpus luteum).	
	Female	1 year				Empty.
	do	Nursing	Left	Left	Right	Worms.
	do	2 years				Three squid; small fish.
	do	Nursing	Right	Right	Left	Four squid beaks.

SCHOONER ENTERPRISE.

[Latitude, 54° 54′ north; longitude, 168° 48′ west. Date, August 12.]

	Female	Nursing	Left	(?)	Right	Many small squid beaks.
	do	2 years			Left	Squid; very small fish.
	do	Very old	Right	Right	(?)	Do.
	do	Nursing	do	(?)	Left	Squid; few small fish.
	Male	1 year				Squid, tentacles 3 inches long.
	do	3 years				Few squid beaks, pollock.?
	do	2 years				Squid; very small fish.
	do	3 years				One squid; many small fish.

SCHOONER MAUD S.

[Latitude, 54° 43′ north; longitude, 168° 45′ west. Date, August 12.]

	Male	2 years				Empty.
	do	3 years				Do.
	do	do				Do.
	do	do				Do.
	Female	2 years				Small squid.
	do	do				Empty.
	do	do				Do.
	do	Nursing	Right	Right	Left	Do.
	do	Virgin				Do.
	do	Nursing	Right	Right	(?)	Do.
	do	2 years				Squid.
	do	Nursing	Right	Right	Left	Bones of pollock; squid beaks.
	do	3 years				Do.

SCHOONER VICTORIA.

[Latitude, 55° 21′ north; longitude, 167° 49′ west. Date, August 20.]

1	Female	1 year				Empty.
2	do	Nursing	Left	Left	Right	Squid, small fish, pollock.
3	do	1 year				Empty.
4	do	do				Blood.
5	do	Nursing	Right	(?)	Right	Squid, small fish, large fish (cod).
6	do	do	Left	Left	do	Squid, small fish, pollock.
7	do	2 years				Do.
8	do	Nursing	Left	Left	Right	Blood.
9	do	do	do	do	do	Squid; small fish.
10	do	do	do	do	do	Cod.
11	do	do	Right	Right	Left	Empty.
12	do	do	do	do	do	Squid; small fish (cod?).
13	do	do	Left	Left	Right	Do.
14	do	1 year				Empty.
15	do					Do.

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[a] Serial number used only where specimens were saved.

Table showing the results of observations made on fur seals taken at sea in Bering Sea, August 11 to 21, 1895, respecting sex, age, pregnancy, and food—Continued.

SCHOONER TRIUMPH.

[Latitude, 55° 21′ north; longitude, 167° 49′ west. Date, August 20.]

Serial number.	Sex.	Age.	Uterus, horn showing former pregnancy.	Ovaries.		Stomach contents.
				Scar resulting from former pregnancy (corpus albicans).	Sign of recent impregnation (corpus luteum).	
16	Female	1 year				Small-fish bones.
17	do	Nursing	Left	Left	Right	Small-fish bones; squid.
18	do	2 years			Left	Salmon.
19	do	Nursing	Right	Right	do	Small fish.
20	do	do	do	do	do	Empty.
21	do	do	do	(?)	do	Do.
22	do	do	do	Right	do	Pollock (?).
23	Male	2 years				Empty.
24	do	4 years				Do.
25	Female	Nursing	Left	Lost	Right	Do.
26	do	do	do	Left	(?)	Squid; small fish.
27	do	do	do	(?)	Right	Do.
28	Male	2 years				Do.
29	Female	Nursing	Left	Left	Right	Small fish.
30	Male	1 year				Empty.
31	Female	Nursing	Left	Left	Right	Do.
32	do	do	Lost	Lost	Lost	Do.
33	do	do	do	do	do	Do.
34	do	do	Left	(?)	Both	Cod (?).
35	do	do	do	Left	Right	Salmon.
36	do	2 years			Left	Squid; small fish.
37	do	Nursing	Right	Right	do	Empty.
38	do	1 year				Do.
39	do	Nursing	Left	Left	Right	Do.
40	do	do	Right	Right	Left	Do.
41	do	do	Left	Left	Right	Salmon, cod.
42	do	do	Right	Right	Left	Squid; small fish.
43	do	do	Right (?)	(?)	do	Empty.
44	do	do	Right	Right	do	Blood.
45	do	2 years			do	Empty.
46	do	Nursing	Right	Right	do	Pollock.
47	do	do	do	do	do	Empty.
48	do	1 year				Squid.
49	do	2 years				Small squid, worms.
50	do	Nursing	Right	(?)	Left	Empty.
51	Male	3 years				Small fish; squid.
52	Female	Nursing	(?)	(?)	Right	Do.
53	do	do	Right	(?)	Left	Squid.
54	do	do	do	Right	do	Small fish.
55	Male	4 years				Squid, pollock.
56	Female	1 year				Empty.
57	do	Nursing	Left	Left	Right	Small fish, squid, worms.
58	do	do	do	do	do	Empty.
59	Male	4 years				Do.
60	Female	Nursing	Left	(?)	Right	Bones of pollock.
61	do	1 year				Empty.
62	Male	3 years				Do.
63	Female	Nursing	Right	Right	Left	Bones of fish.
64	do	do	Left	Left	Right	Blood.
65	do	do	Right	Right	(?)	Pollock bones.
66	do	1 year				Empty.
67	do	Nursing	Right	Right	Left	Squid.

Table showing the results of observations made on fur seals taken at sea in Bering Sea, August 11 to 21, 1895, respecting sex, age, pregnancy, and food—Continued.

SCHOONER G. W. PRESCOTT.

[Latitude, 55° 33′ north; longitude, 168° 11′ west. Date, August 21.]

Serial number.	Sex.	Age.	Uterus, horn showing former pregnancy.	Ovaries.		Stomach contents.
				Scar resulting from former pregnancy (corpus albicans).	Sign of recent impregnation (corpus luteum).	
68	Female	Nursing	Left	Left	Right	Squid, small fish.
69	do	do	do	do	do	Empty.
70	do	do	do	do	do	Minute squid beaks, worms.
71	do	do	Right	(?)	Left	Small squid.
72	do	do	do	Right	do	Pollock or cod.
73	do	do	do	do	(?)	Empty.
74	do	do	do	(?)	Left	Squid, fish bones (pollock?).
75	do	do	Left	(?)	Right	Empty.
76	do	do	Right	Right	Left	Three cod.
77	do	do	do	do	(?)	Cod or pollock.
78	do	do	do	do	(?)	Cod.
79	do	do	do	do	(?)	Salmon.
80	do	do	do	do	(?)	Cod.
81	do	do	Left	Left	(?)	Two cod.

Seals examined	123	Female 2 years	11
Male	17	Male yearling	2
Female	106	Male 2 years	4
Female nursing	78	Male 3 years	8
Female yearling	15	Male 4 years	3

Nursing females 3 years of age or over.
Corpus albicans, the scar indicating ovary from which former pregnancy resulted.
Corpus luteum, the sign of pregnancy or recent ovulation from that ovary.
In these observations only the gross appearance of ovaries is considered; impregnation may have taken place in all the 2 and 3 year old females, and the corpus luteum not yet developed.

LIST OF PHOTOGRAPHS ILLUSTRATIVE OF PELAGIC SEALING.

[Photographs by N. B. Miller, C. H. Townsend, and A. B. Alexander.]

A portion of the sealing fleet at Sand Point, Alaska, in June, 1893.
Canadian sealing schooner *E. B. Marvin*. Bering Sea.
Canadian sealing schooner *Annie E. Paint*. Bering Sea.
Canadian sealing schooner *Dora Siewerd*. Bering Sea.
Canadian sealing schooner *Katherine*, formerly *Black Diamond*.
Canadian sealing schooner *Dora Siewerd* under storm canvas, showing manner of stowing canoes. 1895.
Deck of *Dora Siewerd*. 1895.
Skinning seals, *Dora Siewerd*. 1895.
Canadian sealing schooner seized in Bering Sea prior to 1888.
Canadian sealing schooner *Thornton* seized in Bering Sea prior to 1888.
Canadian sealing schooner *Aivoko* discharging skins at Victoria.
American sealing schooner *Columbia*.
Types of sealing schooners. Victoria Harbor. 1894.
Types of sealing schooners. Victoria Harbor. 1894.
A portion of the Canadian sealing fleet, Victoria Harbor. 1894.
Sealing boats stored at Victoria.
Portion of Indian crew of Canadian schooner *Favorite*. 1894.
Indian hunter of sealing canoe, showing double-pointed spear pole; detaching spear points, with line 30 yards long; paddle; killing club, and wooden boat bailer.
Indian sealing canoe, showing manner of throwing spear.
Indian sealing canoe under sail.
Indian sealing canoe with outfit and catch.
Sleeping seal—usual position, floating back down, with hind flippers turned forward over belly. August 7, 1894. Bering Sea.
Fur seal just awakened.
Starved seal pups, St. Paul Island. September, 1894.
Starved seal pups, St. Paul Island. September, 1894.

Pelagic catch of the American sealing fleet for 1895.

Vessel.	Hunters.		Bering Sea.			Japan coast.			Russian coast.			Northwest coast.		
	White.	Indian.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.
Ida Etta	24							564			484			
M. M. Morrill	5		102	291	393			591						
Allie I. Algar	7		20	173	193	723	381	1,004						
Deeahks		20	141	451	592							20	62	82
W. Ainsworth	5		117	323	440			1,180			61			
J. G. Swan		21	212	872	1,084							68	156	224
Stella Erland	8	16	203	473	676							33	132	165
G. W. Prescott	4	5	141	188	329									
Bering Sea	4	20	165	498	663							35	145	180
E. E. Webster	6		66	205	271			766						
Columbia	1	10	163	381	544							153	216	369
Louis Olsen					340			660						
Therese	7		96	330	426			389						
Emma Louisa	8		108	399	507			350						
Rattler	6		102	390	472	225	351	576						
J. Eppinger	7		113	339	452			785						
Herman	7		103	327	430			637						
Bonanza	10		93	196	289			926						
Alton	6		44	98	142			315						
Winchester	7							589			102			
Bowhead	6					263	421	684						
Jane Grey	5							1,112	43	139	185			
S. Sutherland	6					35	264	309						
Mattie Dyer	6							651	44	90	149			
Penelope	4					164	208	274			98			
Idler	8											6	35	41
Matilda	3	12										5	30	35
Elsie	8	11										84	125	209
Puritan		14										4	6	10
Emmett Felitz	1	17										9	40	49
C. C. Perkins		17										8	26	34
August		13										2	4	6
R. Ecrett	3	13										9	90	99
Teaser	3	20										27	60	87
Jessie	7												24	24
Kate and Ann														391
Total			1,989	5,935	7,924			12,362			1,079	463	1,151	2,005

Pelagic catch of the Canadian sailing fleet for 1895.

Vessel.	Hunters.		Bering Sea.			Japan coast.			Russian coast.			Northwest coast.		
	White.	Indians.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.
Mary Ellen		20	106	356	462			777			190			
Pioneer	24							845			790			
Wanderer		10	197	159	356									
Libbie		21	451	1,016	1,467							182	52	234
Agnes McDonald	8	14	593	669	1,262			711						
Maud S		32	750	642	1,392							185	102	287
Minnie		18	266	393	659									
Annie E. Paint	26		191	575	766			1,121			135			
Sadie Turpel	19							798			470			
Borealis	21		96	641	737			733			110			
Triumph		43	862	995	1,857									353
Mermaid	24							1,156			753			
Ocean Belle	23							1,056			562			
Arietis	22							680			426			
Katherine		21	288	403	691									159
San Diego	17							370			243			
Mary Taylor	18								128	306	434			369
C. G. Cox	26		176	449	625			906			22			
Umbrina	25							1,187			562			
Casco	19							1,309			351			
Viva	23							601			367			
Geneva	29							1,137			470			
Brenda								881			15			

Pelagic catch of the Canadian sailing fleet for 1895—Continued.

Vessels.	Hunters.		Bering Sea.			Japan coast.			Russian coast.			Northwest coast.		
	White.	Indians.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.
Vera	19		177	272	449			856			15			
Diana	19							872			292			
Fortuna	18										219			
E. B. Marvin	27		125	251	376			946			10			
Director	23		317	300	617				60	11	71			
Henrietta		8	45	156	201									
Dora Siewerd		36	766	813	1,577							287	216	503
Victoria		25	601	566	1,167							96	91	187
Labrador		11	107	152	259							32	19	51
Otto		32	432	364	796						30			285
Penelope		24	238	532	770									
Sapphire		37	827	956	1,783							134	33	167
W. L. Rich		24	678	534	1,212									145
Ainoko		26	479	515	994							215	100	325
A. C. Moore		30	730	812	1,542							64	41	105
F. M. Smith		41	564	594	1,158							216	79	285
Aurora		22	186	527	713							57	50	107
Mascot	7	16	126	223	349			787			168			
Rosie Olsen								627						
Oscar and Hattie	9	24	648	519	1,167							139	8	147
Teresa	8	17	335	532	867							42	60	102
C. D. Rand	7	16	182	459	641							107	36	143
Saucy Lass	6	21	269	432	701							152	105	257
Enterprise	7	30	947	782	1,729							166	55	221
Beatrice (Shanghai)	5	28	608	838	1,446							156	74	230
Beatrice (Vancouver)		18	93	109	202									
Fawn	6	28	460	316	776									248
Kate	6	21	279	394	673							86	95	181
San Jose	5	20	318	251	569									143
Favorite	5	36	927	720	1,647									150
May Belle	7	28	437	676	1,113							179	55	234
Amateur	2	14										45	20	65
Fisher Maid	1	12										66	43	109
Kilmeny	3	8										8	7	15
Mountain Chief	2	16										6	33	39
Pachwellis		14										45	26	66
Shelby	10													124
Indian canoe catch														3,787
South Bend	4	10										37	111	148
Total			15,877	19,896	35,773			18,686			6,605			9,972

SUMMATION OF THE PELAGIC CATCH FOR 1895.

	Pribilof Islands herd.			Commander Islands herd.			Grand total.
	Northwest coast.	Bering Sea.	Total.	Japan coast.	Russian coast.	Total.	
Canadian vessels	9,972	35,773	45,745	18,686	6,605	25,291	71,036
American vessels	2,005	7,924	9,929	12,362	1,079	13,441	23,370
Total	11,977	43,697	55,674	31,048	7,684	38,732	94,406

Table showing number of days during month of August, 1894, when pelagic sealing was carried on in Bering Sea, as indicated by log entries of a majority of the vessels of the sealing fleet.

Date.	Vessels.
Aug. 1	Mascot, Borealis, Earle, Favorite, Rich, Minnie, Etta. and Beatrice.
2	Mascot, Therese, Etta, Triumph, Sapphire, Moore, and Katherine.
3	Mascot, San Jose, Borealis, Earle, Favorite, Rich, Therese, Minnie, Etta. Columbia, Beatrice, and Fawn.
4	Jose, Borealis, Earle, Favorite, Rich, Therese, Minnie, Etta, Columbia, Beatrice, Fawn, and L. Olsen.
5	Jose, Borealis. Favorite, Rich. Erland, Minnie, Etta, Columbia, Beatrice, and Fawn.
6	Jose, Ellen, Earle, Rich, Kilmeny, Therese, Deeahks, Erland, Minnie, Etta, Columbia, Fawn, and L. Olsen.
7	Ellen, Borealis, Earle, Favorite, Therese, Deeahks, Minnie, Etta, Columbia, Beatrice, Fawn, and L. Olsen.
8	Jose, Borealis, Ellen, Favorite, Kilmeny, Therese, Deeahks, Erland, Minnie, Columbia, and Beatrice.
9	Mascot, Borealis, Kilmeny, Deeahks, Columbia, Beatrice. Fawn, and Johnson.
10	Jose, Borealis, Ellen, Earle, Mascot, Favorite, Rich, Kilmeny, Deeahks, Minnie, Columbia, Beatrice, Fawn, Johnson, and L. Olsen.
11	Jose, Borealis. Ellen, Favorite, Kilmeny, Therese, Deeahks, Minnie, Etta, Sparks, Beatrice, Fawn, Johnson, and L. Olsen.
12	Jose, Borealis. Rich, Kilmeny, Erland, Minnie, Beatrice, and Johnson.
13	Rosie Olsen, Jane Grey, Arietis, Vera, Sapphire, and Aurora.
14	Borealis and Deeahks.
15	Borealis, Favorite, Grey, Rich, Deeahks, Minnie, Beatrice, Algar, Johnson, and Sparks.
16	R. Olsen, Rich, Deeahks, Erland, Minnie, and Fawn.
17	R. Olsen, Grey, Kilmeny, Minnie, Columbia, and Beatrice.
18	Borealis, R. Olsen, Earle, Favorite, Grey, Rich, Kilmeny, Deeahks, Erland, Minnie, Etta, Beatrice, Henrietta, Algar, Fawn, Johnson, and Sparks.
19	Favorite, Rich, Kilmeny, Deeahks, Minnie, Etta, Columbia, Henrietta, Beatrice, Algar, Johnson, and Sparks.
20	Kilmeny.
22	Ellen, R. Olsen, Earle, Favorite, Grey, Kilmeny, Deeahks, Erland, Minnie, Etta, Algar, and Fawn.
23	Favorite, Rich, Kilmeny, Therese, Deeahks, Minnie, Etta, Columbia, Beatrice, Algar, Fawn, Johnson, and Sparks.
24	Favorite, Rich, Kilmeny, Therese, Deeahks, Minnie, Etta, Columbia, Henrietta, Algar, Johnson, and Sparks.
25	Rich. Kilmeny, Erland, Minnie, Beatrice, and Sparks.
26	Grey, Rich, Kilmeny, Deeahks, Minnie, and Etta.
27	Grey, Rich, Kilmeny, Therese, Deeahks, Erland, Minnie, Etta, Beatrice, Algar, Fawn, and Johnson.
28	Grey, Rich, Kilmeny, Therese, Deeahks, Erland, Minnie, Etta, Columbia, Henrietta, Beatrice, Algar, Fawn, Johnson, and Sparks.
29	Grey, Rich, Kilmeny, Therese, Deeahks, Erland, Minnie, Etta, Columbia, Henrietta, Beatrice, Algar, Fawn, Johnson, and Sparks.
30	Grey, Rich, Kilmeny, Therese, Deeahks, Erland, Minnie, Etta, Henrietta, Beatrice, Algar, Fawn, Johnson, and Sparks.
31	Grey, Rich, Kilmeny, Deeahks, Erland, Minnie, Etta, Columbia, Beatrice, Henrietta, Algar, Fawn, Johnson, and Sparks.

Table showing number of days from September 1 to 21, 1894, when pelagic sealing was carried on in Bering Sea, as indicated by log entries of a majority of the vessels of the fleet.

Date.	Vessels.
Sept. 1	Grey, Rich, Kilmeny, Therese, Deeahks, Erland, Minnie, Columbia, Etta, Beatrice, Henrietta, Algar, Fawn, Johnson, and Sparks.
2	Grey, Rich, Kilmeny, Therese, Deeahks, Erland, Minnie, Etta, Columbia, Beatrice, Henrietta, Algar, Fawn, Johnson, and Sparks.
3	Therese, Columbia, and Katherine.
4	Triumph, Sapphire, Borealis, Ainoko, and Kate.
5	Rich, Columbia, Beatrice, Henrietta, Algar, Fawn, Johnson, and Sparks.
6	Beatrice, Henrietta, Fawn, and Sparks.
7	Erland, Henrietta, Algar, Fawn, Etta, Deeahks, and Johnson.
8	Beatrice, Erland, Etta, Deeahks, Johnson, and Therese.
9	Columbia, Beatrice, Fawn, Etta, Deeahks, Johnson, and Therese.
10	Columbia, Beatrice, Erland, Fawn, Deeahks, and Therese.
11	Sapphire and San Jose.
12	Erland, Fawn, Deeahks, and Mascot.
13	Columbia, Beatrice, Fawn, Deeahks, and Johnson.
14	Beatrice, Erland, Fawn, and Deeahks.
15	Beatrice, Erland, Fawn, Deeahks, and Johnson.
16	Beatrice, Etta, Kate, Saucy Lass, and Beatrice.
17	Beatrice, Etta, Shelby, Ainoko, and Beatrice.
18	Beatrice, Etta, Venture, Saucy Lass, and Beatrice.
19	Etta, Shelby, Beatrice, Sapphire, and Rosie Olsen.
20	Etta, Shelby, and Rosie Olsen.
21	Etta.

Table showing number of days during month of August, 1895, when pelagic sealing was carried on in Bering Sea, as indicated by log entries of a majority of the vessels of the sealing fleet.

Date.	Vessels.
Aug. 1	Rattler, Maud S., M. M. Morrill, Enterprise, Vera, Victoria, Triumph, G. W. Prescott, Columbia, Deeahks, J. G. Swan, Bering Sea, Stella Erland, J. Eppinger, Herman, and Dora Siewerd.
2	Rattler, Maud S., Enterprise, Vera, Victoria, Triumph, G. W. Prescott, Columbia, Deeahks, Willard Ainsworth, J. G. Swan, Bering Sea, Stella Erland, J. Eppinger, Herman, and Dora Siewerd.
3	Maud S., Enterprise, Vera, Victoria, Triumph, Columbia, J. G. Swan, Bering Sea, Stella Erland, Alton, and Dora Siewerd.
4	Rattler, Maud S., M. M. Morrill, Enterprise, Vera, Victoria, Triumph, Columbia, Deeahks, Allie Algar, Willard Ainsworth, J. G. Swan, Bering Sea, Stella Erland, J. Eppinger, and Dora Siewerd.
5	Borealis, M. M. Morrill, Victoria, Triumph, Columbia, Deeahks, Allie Algar, and Stella Erland.
6	Bering Sea.
7	Maud S., Borealis, Vera, and Deeahks.
8	Maud S., Victoria, Columbia, Deeahks, J. G. Swan, Bering Sea, Stella Erland, Louisa, and Rattler.
9	Maud S., Borealis, M. M. Morrill, Enterprise, Vera, Victoria, Triumph, Deeahks, Willard Ainsworth, J. G. Swan, Bering Sea, Stella Erland, E. E. Webster, Bonanza, J. Eppinger, Rattler, and Dora Siewerd.
10	Maud S., M. M. Morrill, Enterprise, Vera, Victoria, Triumph, G. W. Prescott, Columbia, Deeahks, Willard Ainsworth, J. G. Swan, Bering Sea, Stella Erland, Louisa, E. E. Webster, Alton, Bonanza, J. Eppinger, and Therese.
11	Maud S., Enterprise, Vera, Victoria, Triumph, G. W. Prescott, Columbia, Deeahks, Allie Algar, M. M. Morrill, Willard Ainsworth, J. G. Swan, Bering Sea, Stella Erland, Louisa, E. E. Webster, Alton, J. Eppinger, and Therese.
12	Maud S., Vera, Victoria, Triumph, G. W. Prescott, Columbia, Deeahks, Allie Algar, M. M. Morrill, Willard Ainsworth, J. G. Swan, Bering Sea, Stella Erland, Louisa, E. E. Webster, Alton, Bonanza, J. Eppinger, and Therese.
13	Triumph.
14	Victoria, Triumph, Deeahks, M. M. Morrill, Willard Ainsworth, J. G. Swan, Louisa, Alton, Bonanza, J. Eppinger, Therese, Rattler, Herman, and Dora Siewerd.
15	Victoria, Triumph, G. W. Prescott, Columbia, Deeahks, Allie Algar, M. M. Morrill, Willard Ainsworth, J. G. Swan, Bering Sea, Stella Erland, Louisa, E. E. Webster, Alton, Bonanza, J. Eppinger, Therese, Rattler, and Herman.
16	Louisa, J. Eppinger, and Dora Siewerd.
17	Victoria, Triumph, G. W. Prescott, Columbia, Deeahks, Allie Algar, M. M. Morrill, Willard Ainsworth, J. G. Swan, Stella Erland, Louisa, E. E. Webster, Alton, Bonanza, J. Eppinger, Therese, Rattler, and Herman.
18	Triumph, G. W. Prescott, Deeahks, Louisa, E. E. Webster, Alton, J. Eppinger, Therese, Rattler, Herman, and Dora Siewerd.
19	Victoria, Triumph, G. W. Prescott, Columbia, Willard Ainsworth, J. G. Swan, Stella Erland, Louisa J. Eppinger, Therese, Herman, and Dora Siewerd.
20	Victoria, Triumph, G. W. Prescott, Columbia, Deeahks, Allie Algar, M. M. Morrill, Willard Ainsworth, J. G. Swan, Bering Sea, Stella Erland, Louisa, E. E. Webster, Alton, Bonanza, J. Eppinger, Therese, Rattler, and Herman
21	Columbia, Deeahks, G. W. Prescott, Allie Algar, M. M. Morrill, Willard Ainsworth, J. G. Swan, Bering Sea, Stella Erland, Louisa, E. E. Webster, Alton, Bonanza, J. Eppinger, Therese, Rattler, Herman, and Dora Siewerd.
22	G. W. Prescott, M. M. Morrill, Willard Ainsworth, J. G. Swan, Bering Sea, Stella Erland, Louisa, E. E. Webster, Alton, Bonanza, J. Eppinger, Therese, Rattler, Herman, and Dora Siewerd.
23	Bering Sea, Stella Erland, Louisa, Therese, and Herman.
24	Columbia, G. W. Prescott, Allie Algar, M. M. Morrill, Willard Ainsworth, Stella Erland, E. E. Webster, Alton, J. Eppinger, Rattler, and Dora Siewerd.
25	Allie Algar, Louisa, J. Eppinger, Therese, Rattler, and Herman.
26	Allie Algar, Columbia, M. M. Morrill, J. G. Swan, Bering Sea, Louisa, E. E. Webster, Alton, J. Eppinger, Therese, Rattler, Herman, and Dora Siewerd.
27	Deeahks, G. W. Prescott, Allie Algar, Columbia, M. M. Morrill, Willard Ainsworth, J. G. Swan, Bering Sea, Stella Erland, Louisa, E. E. Webster, Alton, Bonanza, J. Eppinger, Therese, Rattler, Herman, and Dora Siewerd.
28	Deeahks, G. W. Prescott, Allie Algar, Columbia, M. M. Morrill, Willard Ainsworth, J. G. Swan, Bering Sea, Stella Erland, Louisa, E. E. Webster, Alton, Bonanza, J. Eppinger, Therese, Rattler, Herman, and Dora Siewerd.
29	Bonanza.
30	Deeahks and G. W. Prescott.
31	Deeahks, G. W. Prescott, Columbia, J. G. Swan, Bering Sea, Alton, Bonanza, Herman, and Dora Siewerd.

Table showing number of days from September 1 to 21, 1895, when pelagic sealing was carried on in Bering Sea, as indicated by log entries of a majority of the vessels of the sealing fleet.

Date.	Vessels.
Sept. 1	Deeahks, G. W. Prescott, Columbia, M. M. Morrill, Willard Ainsworth, J. G. Swan, Bering Sea, Louisa, E. E. Webster, Alton, Bonanza, J. Eppinger, Therese, Rattler, Herman, and Dora Siewerd.
2	Deeahks, G. W. Prescott, Columbia, M. M. Morrill, J. G. Swan, Bering Sea, Stella Erland, Louisa, Alton, Bonanza, J. Eppinger, Therese, Rattler, Herman, and Dora Siewerd.
3	G. W. Prescott, Allie Algar, Columbia, Bering Sea, and Louisa.
4	J. G. Swan and Bering Sea.
5	
6	Therese and Rattler.
7	Deeahks, Columbia, M. M. Morrill, Bering Sea, Stella Erland, Bonanza, and Dora Siewerd.
8	Deeahks, G. W. Prescott, Columbia, M. M. Morrill, Willard Ainsworth, Bering Sea, Louisa, E. E. Webster, Bonanza, J. Eppinger, Therese, Rattler, Herman, and Dora Siewerd.
9	Deeahks, G. W. Prescott, Columbia, M. M. Morrill, Willard Ainsworth, Bering Sea, Stella Erland, Louisa, Bonanza, J. Eppinger, Therese, Rattler, Herman, and Dora Siewerd.
10	Deeahks, G. W. Prescott, Columbia, M. M. Morrill, J. G. Swan, Bering Sea, Stella Erland, Louisa, Bonanza, Rattler, and Dora Siewerd.
11	Deeahks, Columbia, and Bonanza.
12	G. W. Prescott.
13	Bering Sea, Louisa, and Herman.
14	
15	Deeahks, Bering Sea, Stella Erland, J. Eppinger, Rattler, and Dora Siewerd.
16	Columbia, Bering Sea, and Stella Erland.
17	
18	Columbia, Louisa, and Rattler.
20	Stella Erland, Rattler, and Dora Siewerd.
21	Bering Sea.

Miscellaneous data on pelagic sealing in the North Pacific Ocean and Bering Sea from 1878 to 1893, showing positions where fur seals were taken.

[Data collected by C. H. Townsend and A. B. Alexander.]

AMERICAN SCHOONER SAN DIEGO, D. McLEAN, MASTER—1883.

Date.	Latitude.	Longitude.	Seals.	Date.	Latitude.	Longitude.	Seals.
1883.	N.	W.		1883.	N.	W.	
Mar. 30	37 55	125 30	13	July 17	55 34	163 30	22
Apr.	47 23	127 24	29	19	55 40	169 12	....
May	51 04	131 45	....	—	55 00	169 00	293

AMERICAN SCHOONER MARY ELLEN, D. McLEAN, MASTER—1884.

Date.	Latitude.	Longitude.	Seals.	Date.	Latitude.	Longitude.	Seals.
1884.	N.	W.		1884.	N.	W.	
Feb. 1, 2, 3	....	....	12	Apr. 7	47 43	127 43	18
5	38 53	....	6	8	47 56	127 07	2
8	37 18	....	7	10	47 33	125 44	48
9	39 30	124 40	4	11, 12, 14	....	....	11
18	38 13	128 54	....	16	47 53	125 47	13
20	39 35	....	6	18	48 04	126 13	11
21, 22, 23, 27, 28	....	....	35	19	47 57	127 10	32
29	42 02	....	38	20	48 05	....	13
Mar. 1	40 50	....	21	24	50 12	128 30	14
2	....	....	21	25	49 55	128 50	2
3	42 14	....	24	26	49 54	128 34	13
4	....	....	21	May 11	48 33	126 30	15
5	42 18	126 50	7	12	48 26	127 30	12
7	43 10	125 30	4	13	48 35	128 15	5
8	42 58	....	23	14	49 15	127 50	25
12	44 29	125 48	12	22	48 40	127 30	6
13	44 48	126 12	3	23	48 30	127 45	14
14	44 50	125 39	23	24	48 28	129 30	3
15	44 22	125 31	16	25	50 31	131 40	7
16	45 51	124 50	19	July 1	55 50	166 50	2
17	46 38	126 00	8	2	....	....	4
19, 26, 27	....	....	21	8	56 30	167 30	18
28	47 37	126 06	12	9	56 00	167 50	23
29	47 39	125 58	4	10	55 10	167 35	16
30	47 43	126 00	23	13	55 50	167 47	7
31	47 10	125 00	14	14	55 50	168 35	44
Apr. 4	47 42	126 03	21	15	55 56	168 24	98
5	47 31	126 44	20	18	55 52	168 00	64
6	47 24	126 19	12	19	55 52	167 30	22

Miscellaneous data on pelagic sealing in the North Pacific Ocean and Bering Sea from 1878 to 1893, showing positions where fur seals were taken—Continued.

AMERICAN SCHOONER MARY ELLEN, D. McLEAN, MASTER—1884—Continued.

Date.	Latitude.	Longitude.	Seals.	Date.	Latitude.	Longitude.	Seals.
1884.	N.	W.		1884.	N.	W.	
July 21	55 30	168 00	22	Aug. 9	55 10	169 30	140
24	55 09	166 49	43	10	55 13	169 39	67
25	54 30	168 00	4	11	55 08	170 00	63
26	54 40	168 50	43	12	55 10	169 05	14
27	55 00	168 30	4	16	55 00	169 00	28
31	54 20	170 15	25	17	54 35	168 40	41
Aug. 1	54 30	168 00	15	18	54 43	166 20	26
2	54 41	170 28	6	19	54 25	167 20	10
3	54 47	168 30	63	20	54 53	165 15	50
4	54 15	169 00	8	21	54 50	165 20	53
6	55 18	168 19	10	22	54 50	165 40	66
7	55 25	169 00	131	23 *a*	....	....	2
8	55 18	169 39	21				

a Bound for walrus.

AMERICAN SCHOONER MARY ELLEN, D. McLEAN, MASTER—1885.

1885.	N.	W.		1885.	N.	W.	
Jan. 26	38 34	124 00	4	May 28	56 16	137 51	48
29	34 42	124 30	14	29	56 27	137 43	2
Feb. 4	39 43	124 28	15	31	....	....	7
5	39 42	124 10	21	June 1	58 11	138 10	7
9	39 35	124 20	16	2	58 00	138 23	2
13	39 36	124 40	1	3	57 40	139 00	38
16	39 50	126 00	3	4	57 55	140 00	8
17	....	....	33	5	57 49	139 47	15
20	40 11	....	14	6	58 20	144 30	4
21	39 55	125 10	10	8	56 13	148 21	3
25	....	....	5	9	55 58	151 49	1
28	39 50	124 30	9	11	54 20	157 18	1
Mar. 1	39 38	125 55	7	12	53 50	158 10	43
6	38 57	124 25	29	15	53 37	162 33	3
7	39 00	....	39	16	53 30	164 30	20
8	41 20	125 35	3	19	53 00	167 00	14
9	42 50	124 40	3	26	....	....	1
11	43 02	125 00	45	30	55 40	165 17	1
12	43 07	125 40	26	July 1	56 17	168 23	31
14	43 19	125 00	27	2	....	....	1
15	43 50	125 00	9	4	56 19	168 17	39
17	44 54	125 15	2	8	....	....	1
18	45 09	125 15	8	9	56 51	169 07	30
19	45 40	124 30	11	10	55 45	167 45	15
20	45 40	125 00	13	12	55 26	168 48	95
21	46 00	....	2	13	....	....	1
24	46 51	124 50	3	14	....	....	1
25	46 57	125 30	18	15	....	....	28
26	47 25	125 30	14	16	....	....	14
27	47 46	125 00	15	17	....	....	5
28	47 40	125 12	12	18	55 46	....	33
29	48 05	125 30	18	19	55 28	169 10	75
30	48 00	125 30	8	20	55 26	169 02	7
31	48 10	125 30	4	24	....	....	8
Apr. 1	48 42	125 30	2	26	55 00	169 04	50
3	47 41	125 27	11	27	....	....	2
4	48 14	126 25	12	28	55 14	168 04	67
6	48 01	126 50	15	29	55 10	168 07	43
10	48 10	126 40	1	30	....	....	32
11	49 00	127 00	13	31	....	....	23
16	48 20	126 15	1	Aug. 1	54 55	168 00	55
17	48 34	....	2	2	54 45	168 50	18
18	....	....	10	3	55 38	168 52	19
27	....	....	6	9	55 10	169 05	44
May 11	49 00	127 00	6	12	55 08	168 13	39
12	49 23	....	4	14	55 20	170 15	20
15	49 24	....	13	15	55 20	170 15	47
17	50 30	129 20	3	16	55 26	169 00	41
19	51 37	130 37	7	17	53 30	169 30	0
20	52 12	132 48	17	18	54 00	168 10	23
21	52 39	132 50	5	19	54 24	168 00	83
22	54 32	133 58	3	20	54 41	167 40	2
24	56 20	137 00	4	21	55 18	....	24
25	56 39	137 10	26	22	54 43	166 30	21
26	56 45	137 51	8	23	54 40	168 20	25
27	56 34	137 56	19	24	54 40	168 20	7

Miscellaneous data on pelagic sealing in the North Pacific Ocean and Bering Sea from 1878 to 1893, showing positions where fur seals were taken—Continued.

AMERICAN SCHOONER MARY ELLEN, D. McLEAN, MASTER—1885—Continued.

Date.	Latitude.	Longitude.	Seals.	Date.	Latitude.	Longitude.	Seals.
1885.	N.	W.		1885.	N.	W.	
Aug. 25	54 31	168 27	104	Aug. 30	54 22	169 10	23
26	54 26	168 23	72	Sept. 1	55 30	168 45	34
27	54 26	169 26	15	2	55 00	168 00	48
29	54 09	169 00	48	3	55 12	167 10	24

AMERICAN SCHOONER MARY ELLEN, D. McLEAN, MASTER—1886.

1886.	N.	W.		1886.	N.	W.	
Feb. 3	39 00	124 10	1	June 1	56 41	138 50	139
7	40 00	124 50	10	2	56 38	139 00	151
8	40 10	125 27	9	3	56 50	138 39	44
9	39 35	125 00	4	6	57 50	139 55	95
11	40 01	124 40	3	7	57 40	139 35	125
17	38 31	124 08	36	8	57 36	139 57	197
18	38 33	123 50	44	9	57 31	140 41	179
19	38 30	123 47	29	10	57 09	140 48	172
20	38 35	....	8	11	57 05	139 50	38
21	38 33	....	4	12	57 10	139 40	32
Mar. 3	38 00	123 34	23	July 2	54 40	168 45	24
4	38 31	123 31	14	3	54 20	168 32	27
5	38 48	123 50	11	8	54 45	168 35	157
7	39 47	124 23	2	12	55 04	169 25	79
9	40 27	125 00	5	13	55 03	169 42	129
15	40 40	124 48	21	15	54 58	168 10	60
24	48 15	125 26	5	17	55 04	169 33	57
25	....	....	1	18	54 50	168 50	96
28	47 45	125 31	24	21	54 58	170 28	51
29	47 51	125 11	26	22	54 36	170 40	135
30	48 00	125 20	9	24	54 45	168 30	74
31	47 52	125 00	9	25	54 51	....	49
Apr. 1	47 49	125 00	7	28	54 51	168 34	31
2	47 36	124 50	5	29	54 40	168 24	230
3	47 34	125 08	19	30	54 45	168 47	135
5	48 20	126 56	20	31	....	....	45
7	48 36	127 02	3	Aug. 1	54 45	168 00	152
9	50 17	128 30	4	2	54 50	168 00	87
10	50 12	128 17	1	3	54 51	169 15	45
11	49 51	128 16	90	4	54 30	168 30	8
12	50 06	....	16	5	54 00	168 10	6
13	49 54	128 15	10	7	53 40	....	93
22	48 33	125 56	13	8	53 30	....	61
24	48 15	125 40	34	9	54 00	....	88
28	47 45	126 00	5	10	53 50	170 30	127
May 2	48 15	125 15	18	11	53 15	170 00	18
3	48 14	125 25	32	15	53 51	169 45	44
4	48 27	125 56	63	19	54 40	169 00	146
6	49 49	127 27	20	21	....	....	58
7	49 30	128 20	17	23	54 45	167 20	37
8	49 54	128 22	53	24	....	....	31
10	49 10	127 20	24				

AMERICAN SCHOONER MARY ELLEN, D. McLEAN, MASTER—1887.

1887.	N.	W.		1887.	N.	W.	
Jan. 24	41 18	125 45	2	Apr. 6	49 14	128 16	18
Feb. 2	37 44	124 10	23	7	....	....	33
7	38 00	124 00	7	8	49 33	127 54	7
17	....	....	5	10	49 36	127 29	5
Mar. 1	38 00	124 00	4	12	50 07	128 45	15
5	40 53	....	4	13	....	....	28
9	47 38	125 35	7	15	49 30	127 30	14
15	47 38	125 35	2	May 9	50 17	128 40	38
17	48 00	126 00	5	11	50 01	129 00	19
19	48 18	126 36	39	13	....	....	5
20	48 00	126 20	27	14	52 00	134 12	71
21	48 00	126 34	10	15	....	....	3
22	48 00	126 30	59	18	55 45	136 34	10
23	48 00	126 30	6	19	55 38	136 00	96
24	48 06	127 40	6	21	56 13	136 00	1
27	47 42	126 00	2	22	56 52	139 11	20
28	48 00	126 00	29	23	57 26	139 41	24
30	49 00	127 00	10	24	56 48	138 57	24

Miscellaneous data on pelagic sealing in the North Pacific Ocean and Bering Sea from 1878 to 1893, showing positions where fur seals were taken—Continued.

AMERICAN SCHOONER MARY ELLEN, D. McLEAN, MASTER—1887—Continued.

Date.	Latitude.	Longitude.	Seals.	Date.	Latitude.	Longitude.	Seals.
1887.	N.	W.		1887.	N.	W.	
May 30	57 43	138 00	18	July 9	54 44	168 25	4
31	....	....	7	11	....	....	5
June 1	56 36	139 00	32	12	55 32	167 36	38
2	....	....	34	13	55 47	168 10	134
5	56 53	139 32	9	17	55 24	168 04	54
9	57 32	143 02	23	18	55 30	167 45	103
11	57 44	148 28	5	21	55 51	168 10	29
12	55 46	150 56	1	22	55 25	167 40	144
14	55 01	156 17	36	24	55 20	167 20	74
15	54 38	156 20	7	25	55 41	167 51	49
16	54 30	....	1	26	55 15	167 40	49
19	53 43	162 02	1	27	....	....	22
20	52 57	165 18	10	31	54 28	169 00	70
22	52 43	167 05	27	Aug. 1	54 41	169 00	95
25	53 57	(*a*)	......	3	54 20	169 00	11
26	53 30	172 30	28	5	54 15	171 00	239
27	53 17	172 16	20	6	54 15	170 30	45
28	52 50	171 10	10	7	54 22	170 30	12
29	54 40	170 20	2	8	54 00	171 00	53
30	55 40	170 10	1	9	54 18	171 30	23
July 1	54 00	170 48	8	15	54 19	170 01	29
2	54 02	....	39	17	53 53	170 27	19
4	54 19	167 21	29	18	53 47	169 57	20
5	54 20	167 18	37	19	53 37	170 05	87
8	....	....	3				

a Bering Sea.

CANADIAN SCHOONER FAVORITE (BERING SEA), D. McLEAN, MASTER—1886.

1886.	N.	W.		1886.	N.	W.	
July 8	55 54	167 25	11	July 29	55 15	167 43	119
9	55 58	167 08	16	30	55 24	168 08	106
10	58 37	169 09	78	31	55 17	168 17	128
11	55 18	167 21	113	Aug. 1	54 50	168 49	32
12	55 19	167 23	106	2	54 40	168 50	142
13	55 25	166 56	173	3	54 39	169 23	(*a*)
14	55 20	167 05	149	4	54 35	168 40	....
15	55 30	167 20	24	5	54 50	170 07	....
16	55 30	168 00	47	6	55 06	170 40	....
17	55 30	168 00	139	7	54 51	170 49	....
19	55 39	168 25	113	8	54 46	171 01	....
20	55 32	169 11	124	9	55 03	170 40	....
21	55 35	168 50	45	13	54 45	168 17	....
22	55 32	167 10	3	14	55 24	168 35	....
23	55 26	167 15	92	15	55 30	169 10	....
24	55 21	167 30	31	16	56 15	166 45	....
27	54 55	167 30	16	17	55 40	165 20	....
28	55 01	167 49	154	18	55 12	165 40	....

a From August 2 to the end of the cruise no record of seals written in the log.

CANADIAN SCHOONER FAVORITE (BERING SEA), D. McLEAN, MASTER—1887.

1887.	N.	W.		1887.	N.	W.	
July 10	55 17	166 41	2	Aug. 2	55 16	168 29	29
11	55 42	168 37	23	4	55 05	168 45	83
12	55 53	168 30	13	5	55 45	168 50	105
13	55 40	168 18	*a* 54	6	55 45	168 47	108
14	55 23	168 30	....	8	55 38	169 18	109
15	55 20	168 24	13	9	55 47	169 23	36
16	55 12	168 30	41	12	55 48	169 20	103
17	55 12	168 30	46	15	55 30	169 00	10
18	55 15	168 25	68	17	55 20	167 56	26
19	55 28	169 00	....	18	55 03	168 20	147
20	55 38	169 12	1	19	54 37	168 17	3
21	55 19	169 00	59	20	54 30	168 25	14
22	55 13	168 50	5	22	54 30	168 50	57
23	55 14	168 45	18	23	54 25	169 00	16
24	55 27	168 40	171	24	54 20	169 12	122
25	55 17	168 50	9	25	51 06	170 04	140
26	55 05	168 40	4	26	53 55	170 00	19
29	55 20	167 40	4				
31	55 06	167 45	56	Total	....	....	1,810
Aug. 1	55 30	168 30	86				

a This catch made by white hunters.

Miscellaneous data on pelagic sealing in the North Pacific Ocean and Bering Sea from 1878 to 1893, showing positions where fur seals were taken—Continued.

AMERICAN SCHOONER HENRY DENNIS (NORTHWEST COAST), R. H. MINER, MASTER—1891.

Date.	Latitude.	Longitude.	Seals.	Date.	Latitude.	Longitude.	Seals.
1891.	N.	W.		1891	N.	W.	
Apr. 29	53 40	133 30	30	May 29	57 31	136 50	24
May 2	54 41	135 49	3	30	57 38	136 46	68
6	54 42	136 27	21	31	57 38	137 20	16
7	51 15	137 48	8	June 4	58 38	141 10	17
8	57 40	136 51	90	6	58 30	140 27	38
9	57 40	136 51	64	7	58 12	140 27	2
10	57 40	136 51	64	8	58 31	141 34	39
11	57 40	136 51	55	9	59 03	140 37	13
12	57 40	136 51	30	10	58 57	140 45	75
15	57 49	138 50	35	11	58 34	140 56	1
18	59 08	141 08	49	14	58 39	144 25	13
19	58 58	141 19	1	16*a*	57 45	150 47	1
22	58 48	140 18	31	17*b*	57 45	150 47	9
25	57 20	136 49	1	18	57 05	151 00	3
26	57 35	136 52	10	July 27	51 32	164 44	1
27	57 35	136 52	1				

a Portlock Bank, 50 fathoms, 600 pounds codfish. *b* Codfish plenty.

AMERICAN SCHOONER HENRY DENNIS (NORTHWEST COAST AND COPPER ISLAND REGION), R. H. MINER, MASTER—1892.

1892.	N.	W.		1892.	N.	W.	
Jan. 20	48 13	125 21	....	May 17	58 41	147 50	13
21	47 23	125 37	1	18	58 23	140 40	11
23	46 45	124 30	1	21	57 06	149 38	15
Feb. 5	46 21	126 38	24	22	57 18	150 05	18
6	46 20	127 00	9	25	57 26	150 18	1
14	46 51	124 46	9	29	58 15	158 20	84
15	46 48	124 36	30	30	58 02	150 15	8
16	46 58	124 42	8	31	....	....	121
17	46 27	125 58	6	June 1	58 00	150 00	20
18	46 17	124 57	4	7	55 40	152 55	1
19	46 19	124 54	7	8	55 31	154 40	5
Mar. 19	48 19	125 54	4	9	55 20	155 10	1
20	48 36	126 59	1			E.	
21	49 29	127 47	2	July 2*b*	52 24	169 49	....
Apr. 3	57 12	137 38	5	4*c*	....	....	7
5	56 36	138 06	3	6	54 00	168 28	5
6	57 11	137 37	8	10	54 09	168 53	5
7	57 17	137 52	46	14	53 46	166 52	6
8	57 11	138 07	20	15	54 01	168 28	34
10	56 47	138 40	58	17	54 14	179 17	1
12	56 55	138 07	65	22	53 59	170 00	2
15	55 58	139 51	1	23	54 13	169 39	2
16	56 55	138 30	27	25	54 27	169 38	38
18	57 41	139 27	61	26	54 39	169 20	3
22	57 52	140 13	40	27	54 01	169 17	27
23	57 52	140 13	87	28	53 52	169 21	37
24	58 56	141 48	5	29	53 46	169 30	7
25	58 56	141 48	116	Aug. 1	56 37	168 30	1
26	....	....	97	3	56 40	168 38	13
27	....	....	173	4	56 27	168 13	40
28	....	....	101	5	56 20	168 07	108
29*a*	....	....	31	6	56 37	168 10	26
30	....	....	60	7	56 43	167 50	1
May 1	59 14	142 18	1	9	54 21	170 00	2
2	58 45	143 16	7	10	53 35	169 49	15
4	59 28	145 09	39	11	53 53	168 30	2
5	59 20	145 03	38	12	53 35	168 50	24
6	59 17	144 44	4	14	53 10	167 14	1
8	59 09	147 05	16	18	53 18	169 45	13
11	59 15	146 27	8	19	53 41	169 51	20
12	59 06	145 45	179	22	52 36	170 53	3
13	59 15	146 27	15	23	52 18	169 10	68
14	59 16	145 30	3	26	52 38	169 45	20
15	59 22	148 57	1	27	52 24	170 02	31
16	59 13	145 12	25	28	52 24	170 06	1

a Mount St. Elias north 50 miles. *b* A few seals seen. *c* Copper Island in sight, bearing west.

Miscellaneous data on pelagic sealing in the North Pacific Ocean and Bering Sea from 1878 to 1893, showing positions where fur seals were taken—Continued.

CANADIAN SCHOONER UMBRINA (JAPAN COAST)—1893.

Date.	Latitude.	Longitude.	Seals.	Date.	Latitude.	Longitude.	Seals.
1893.	N.	E.		1893.	N.	E.	
Apr. 19	38 00	143 00	....	May 23	40 15	143 33	43
20	38 30	143 00	91	24	41 00	143 37	52
22	39 30	143 15	....	25	40 56	143 23	95
24	39 40	144 22	3	26	40 50	143 10	19
27	38 30	145 55	31	29	39 40	144 20	....
28	37 30	145 40	79	30	40 30	144 00	6
29	37 15	145 17	71	June 2	39 50	145 05	26
30	37 10	145 10	51	3	40 11	145 05	47
May 1	37 18	145 30	45	4	40 50	144 35	13
2	37 07	145 20	191	6	42 00	145 05	7
3	37 20	145 09	10	7	41 27	145 35	32
6	37 04	145 00	....	8	41 55	143 56	79
7	37 36	145 15	4	9	41 57	143 50	51
8	37 37	145 40	19	10	42 04	143 50	9
10	39 30	144 40	61	11	42 16	144 35	29
11	40 20	145 35	9	12	42 55	145 20	4
12	39 58	144 45	75	13	43 00	147 00	....
13	40 09	145 49	....	14	43 06	147 56	....
14	40 00	144 51	84	15	43 06	147 41	29
15	39 50	144 45	18	16	43 09	147 20	85
16	39 45	144 15	65	18	43 15	147 00	25
17	39 59	145 55	27	19	43 35	147 05	35
18	39 25	145 15	61	20	43 25	147 18	4
19	40 20	144 40	105	21	43 12	147 33	10
20	40 22	144 35	2	22	43 12	147 33	8
22	40 10	143 40	2	23	....	....	7

CANADIAN SCHOONER TRIUMPH (JAPAN COAST), COX, MASTER—1892.

	N.	E.			N.	E.	
Apr. 1	39 17	145 06	37	Apr. 27	40 04	145 10	35
2	39 36	145 02	95	28	39 43	145 39	155
6	40 00	145 08	64	29	39 26	145 47	67
7	40 28	145 28	9	30	39 23	146 26	25
9	39 48	145 10	168	May 3	40 02	145 41	15
10	39 49	145 05	111	6	39 36	145 06	7
11	39 50	145 10	13	7	40 22	145 32	15
14	40 13	145 26	43	8	40 15	146 18	33
15	40 10	145 05	104	9	40 18	145 38	39
16	45 09	144 09	38	10	40 36	145 12	17
17	40 30	144 25	9	11	40 05	145 20	48
18	39 23	145 07	18	12	40 11	145 13	28
20	40 53	145 28	13	14	40 11	145 32	61
21	40 07	145 50	27	15	40 39	145 21	10
24	39 37	145 08	103	16	40 46	145 21	34

CANADIAN SCHOONER TRIUMPH (NORTHWEST COAST), COX, MASTER—1893.[a]

	N.	W.			N.	W.	
Apr. 10	57 48	138 38	....	May 7	57 41	141 52	103
11	57 57	138 57	....		57 38	140 59	....
12	58 02	139 09	....		57 45	141 22	....
22	57 25	139 19	....		57 57	142 37	....
23	57 21	138 38	....	16	58 06	141 43	....
29	57 51	139 31	....	17	58 08	141 50	[b] 239
30	58 31	140 06	....				

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[a] Captain Cox has found seals plentiful in September in latitude 49° 40′ and longitude 147°. A good sealing ground is Mount Fairweather, 115 miles north one-half west.

[b] In three days.

Miscellaneous data on pelagic sealing in the North Pacific Ocean and Bering Sea from 1878 to 1893, showing positions where fur seals were taken—Continued.

CANADIAN FUR-SEAL CATCH IN 1893.

[From official sources.]

[Catch by each vessel of the British Columbia fleet and the place where the skins were taken.]

Vessel.	British Columbia coast.	Japan coast.	Russian coast.	Total.
Triumph	1,713		623	2,336
Sapphire	1,262		341	1,603
E. B. Marvin	1,014		517	1,531
Mascot	857		327	1,184
Dora Siewerd	1,426		434	1,860
Labrador	263			263
Minnie	489		20	509
Annie E. Paint	740		401	1,141
Mischief	344			344
Diana	707		294	1,001
Venture	82			82
Mermaid		940	315	1,255
Fawn	806		77	883
Walter A. Earle	1,622			1,622
Beatrice, of Victoria	655			655
Ocean Belle	1,316		547	1,863
Mountain Chief	128			128
Arietis		920	464	1,384
Cape Beale	86			86
Kate	293			293
Favorite	949			949
Borealis	1,307			1,307
Ainoko	1,344		46	2,390
W. P. Sayward	596			596
Katherine	352		363	715
San José	242			242
Enterprise		1,027	274	1,301
Agnes McDonald		2,333	433	2,766
Victoria	420			420
Rosie Olsen	358			358
Wanderer	206			206
Viva		1,441	30	1,471
May Belle		1,852		1,852
Umbrina		1,827	625	2,452
Penelope		2,291		2,291
Vera		1,910	99	2,009
Pioneer	1,050			1,050
Otto	630		397	1,027
Mary Taylor	845		240	1,085
Brenda	845		408	1,253
Libbie		1,242	389	1.631
City of San Diego		942	101	1,043
Geneva		1,612	454	2,066
Casco		1,473	199	1,672
Carlotta G. Cox		2,396	376	2,772
Oscar and Hattie		1,178	1,020	2,198
Teresa		677	147	824
Sadie Turpel		927	475	1,402
Maud S		989		989
Mary Ellen		1,573	406	1,979
W. L. Rich	1,321		517	1,838
Annie C. Moore		822	333	1,155
W. P. Hall		735	263	998
Beatrice, of Vancouver	950			950
C. D. Rand	1,060			1,060
Indian canoe catch	2,035	66		2,101
Total	28,613	29,173	11,955	69,741

Positions of fur seals observed by Lieut. Commander Z. L. Tanner, U. S. N., from steamer City of Peking in 1878.

Date.	Latitude.	Longitude.
1878.	N.	W.
July 1	43 01	161 23
		E.
June 25	42 55	162 14
June 27	42 44	172 40
June 28	42 43	177 43

Positions where fur seals were taken by American and Canadian vessels in Bering Sea and the North Pacific Ocean in 1894.

[From official sources.]

AMERICAN SCHOONER ELLA JOHNSON (BERING SEA), R. H. MINER, MASTER.

Date.	Latitude.	Longitude.	Males.	Females.	Total.
1894.	N.	W.			
Aug. 9	54 24	166 45	1	....	1
10	54 46	167 20	4	55	59
11	54 47	168 18	....	9	9
12	55 05	168 55	20	95	115
15	54 37	168 26	15	48	63
18	54 15	168 43	18	47	65
19	54 17	168 25	21	81	102
23	54 39	167 07	14	71	85
24	54 30	167 20	10	70	80
27	55 01	167 58	2	10	12
28	57 37	169 03	5	37	42
29	54 15	168 57	35	63	98
30	54 07	168 34	15	34	49
31	54 10	168 51	16	32	48
Sept. 1	54 09	168 33	40	63	103
2	54 29	168 39	10	45	55
5	54 29	167 42	20	11	31
7	54 52	168 54	28	40	68
8	54 49	168 54	25	30	55
9	54 07	168 56	15	30	45
13	54 52	169 03	2	4	3
15	54 41	167 57	6	17	26
Total	....	....	322	892	1,214

AMERICAN SCHOONER DEEAHKS (BERING SEA), JAMES CLAPLANHOY, MASTER.

[Catch, 1,023; 155 males, 868 females.]

1894.	N.	W.			
Aug. 6	54 33	167 00	....	....	11
7	54 41	168 00	....	....	7
8	54 53	170 52	....	....	11
9	55 36	172 17	....	....	2
10	56 02	172 27	....	....	55
11	56 10	172 37	....	....	20
14	56 21	173 09	....	....	1
15	55 43	172 39	....	....	9
16	55 35	172 36	....	....	1
18	55 16	171 05	....	....	23
19	55 11	170 42	....	....	13
22	54 10	167 00	....	....	51
23	54 25	167 30	....	....	36
24	54 35	167 38	....	....	40
26	54 59	167 00	....	....	5
27	55 03	166 34	....	....	12
28	54 37	167 21	....	....	153
29	54 30	167 14	....	....	91
30	54 30	167 14	....	....	58
31	54 54	166 56	....	....	14
Sept. 1	54 25	166 47	....	....	170
2	54 34	167 18	....	....	80
7	54 35	166 57	2	2	4
8	54 43	166 49	9	21	30
9	54 34	166 51	17	34	51
10	54 34	166 51	1	4	5
12	54 43	167 33	....	1	1
13	54 42	167 16	5	7	12
14	54 35	166 45	4	13	17
15	54 35	166 45	13	27	40

NOTE.—Data for sex not collected by me from August 6 to September 2, but reported from custom-house at Port Townsend as 155 males, 868 females.—C. H. T.

Positions where fur seals were taken by American and Canadian vessels in Bering Sea and the North Pacific Ocean in 1894—Continued.

AMERICAN SCHOONER STELLA ERLAND (BERING SEA).

Date.	Latitude.	Longitude.	Males.	Females.	Total.
1894.	N.	W.			
Aug. 5	54 44	167 23	7	37	44
6	54 56	167 41	3	13	16
8	56 04	165 59	....	6	6
12	58 24	168 01	....	1	1
16	58 11	172 27	....	1	1
18	57 48	172 28	2	33	35
22	56 30	172 35	3	21	24
25	56 13	171 30	....	1	1
27	54 40	168 59	1	5	6
28	54 24	168 57	5	9	14
29	53 47	169 35	14	32	46
30	53 35	169 41	31	51	82
31	53 34	169 21	23	35	58
Sept. 1	53 38	169 25	39	59	98
2	53 47	169 40	21	29	50
7	54 20	167 47	17	8	25
8	54 46	166 55	32	55	87
10	54 55	166 59	3	12	15
12	55 09	166 55	1	....	1
14	54 48	166 36	7	22	29
15	54 47	166 15	10	112	122
Total	....	....	219	542	761

AMERICAN SCHOONER IDA ETTA (BERING SEA), B. B. WHITNEY, MASTER.

[Crew, 17; boats, 9; hunters, 9.]

Date.	Latitude.	Longitude.	Males.	Females.	Total.
1894.	N.	W.			
Aug. 1	54 40	169 00	5	2	7
2	55 06	170 46	6	8	14
3	54 46	171 25	3	4	7
4	54 50	171 34	12	51	63
5	54 49	171 37	1	12	13
6	55 33	173 48	2	6	8
7	55 50	173 35	6	12	18
11	58 00	173 40	....	1	1
18	54 09	168 39	25	53	78
19	54 15	168 10	6	17	23
22	54 18	167 55	3	....	3
23	54 05	168 05	3	....	3
24	54 07	168 25	....	36	36
26	54 15	167 27	2	....	2
27	54 16	168 50	15	37	52
28	54 17	168 14	6	13	19
29	54 43	167 50	5	20	25
30	54 45	167 49	14	59	73
31	54 44	169 00	2	18	20
Sept. 1	54 25	169 35	35	46	81
2	54 26	168 35	9	18	27
7	54 24	167 25	....	1	1
8	54 17	168 09	10	2	12
9	54 18	168 15	8	4	12
16	54 58	167 23	....	1	1
17	55 11	167 39	14	14	28
19	54 32	166 03	5	38	43
20	54 28	165 55	4	21	25
21	54 24	166 05	6	33	39
Total	....	....	204	532	736

Positions where fur seals were taken by American and Canadian vesssls in Bering Saa and the North Pacific Ocean in 1894—Continued.

AMERICAN SCHOONER COLUMBIA (BERING SEA), T. J. POWERS, MASTER.

[Crew, 24; canoes, 10; hunters, 10; boats, 1.]

Date.	Latitude.	Longitude.	Males.	Females.	Total.
1894.	N.	W.			
Aug. 3	55 11	171 10	9	4	13
4	55 17	171 31	26	27	53
5	55 32	173 30	6	9	15
6	56 09	173 30	3	3	6
7	56 30	173 10	7	5	12
8	56 33	172 34	5	10	15
9	56 51	172 28	1	....	1
10	56 54	172 43	11	16	27
11	57 09	173 19	20	27	47
17	57 01	174 20	3	2	5
19	57 06	174 14	4	8	12
23	57 49	173 50	3	9	12
24	57 49	175 01	2	2	4
28	57 54	175 09	2	1	3
29	57 00	173 52	19	23	42
31	55 46	173 07	1	....	1
Sept. 1	55 25	172 55	3	6	9
2	55 23	172 24	18	25	43
3	54 58	172 26	1	3	4
5	54 28	167 57	19	14	33
9	54 19	167 53	3	5	8
10	30 miles north of Bogoslof Island.		9	15	24
13	54 25	167 30	5	9	14
Total	....	....	180	223	403

AMERICAN SCHOONER THERESE (BERING SEA), CHARLES HARITWEN, MASTER.

[Crew, 22; boats, 6; hunters, 6.]

1894.	N.	W.			
Aug. 2	56 11	175 17	....	1	1
3	56 57	174 15	....	1	1
4	57 54	174 06	1	3	4
6	58 09	173 38	1	12	13
7	58 22	173 04	1	25	26
8	58 21	173 08	....	2	2
11	58 02	171 50	2	....	2
23	55 05	166 45	1	11	12
24	54 52	166 54	....	37	37
27	54 56	166 24	....	5	5
28	54 43	166 52	20	31	51
29	54 22	166 52	13	23	36
30	54 22	166 27	10	10	20
Sept. 1	54 49	165 59	20	46	66
2	54 47	166 18	6	9	15
3	54 46	166 19	1	....	1
8	54 50	165 21	1	5	6
9	54 39	166 26	4	15	19
10	54 36	166 26	....	1	1
Total	....	....	81	237	318

AMERICAN SCHOONER ALLIE I. ALGAR (BERING SEA), WESTER, MASTER.

	N.	W.			
Aug. 15	53 49	168 50	1	....	1
18	54 46	167 43	20	49	69
19	54 46	167 30	10	15	25
22	54 25	167 18	10	13	23
23	54 40	167 50	5	4	9
24	55 12	168 08	3	5	8
27	54 40	168 40	11	16	27
28	54 35	168 20	12	20	32
29	54 50	168 06	23	29	52
30	54 47	167 57	16	20	36
31	54 20	167 19	....	3	3
Sept. 1	55 12	167 36	9	14	23
2	55 13	168 08	2	2	4
5	56 05	167 55	2	4	6
7	55 39	168 14	4	5	9
Total	....	....	128	199	327

Positions where fur seals were taken by American and Canadian vessels in Bering Sea and the North Pacific Ocean in 1894—Continued.

AMERICAN SCHOONER ROSE SPARKS (BERING SEA), J. W. TROTT, MASTER.

Date.	Latitude.	Longitude.	Males.	Females.	Total.
1894.	N.	W.			
Aug. 11	56 42	174 23	1	1	2
15	55 48	172 27	....	2	2
18	54 42	167 48	5	52	57
19	54 48	167 20	1	2	3
23	54 31	167 15	5	14	19
24	55 26	167 57	1	....	1
25	55 45	167 47	....	2	2
28	55 06	167 48	3	18	21
29	54 54	168 10	5	25	30
30	54 48	168 20	5	17	22
31	54 54	167 30	2	2	4
Sept. 1	54 42	167 34	6	20	26
2	54 42	167 25	1	1	2
5	54 31	165 45	1	2	3
6	54 28	165 35	1	2	3
Total	....	....	37	160	197

AMERICAN SCHOONER JANE GREY (BERING SEA).

Date.	Latitude.	Longitude.	Males.	Females.	Total.
1894.	N.	W.			
Aug. 13	55 20	172 28	1	4	5
15	56 01	175 00	....	1	1
17	55 56	172 34	1	3	4
18	55 52	173 06	2	8	10
22	54 59	170 32	2	7	9
26	54 28	168 18	1	7	8
27	54 28	168 45	13	17	30
28	54 36	168 24	7	9	16
29	54 32	168 16	5	8	13
30	54 20	167 45	4	7	11
31	54 56	167 32	1	....	1
Sept. 1	55 30	167 12	2	8	10
2	55 02	165 55	7	13	20
Total	....	....	46	92	138

AMERICAN SCHOONER LOUIS OLSEN (BERING SEA), GUILLAMS, MASTER.

Date.	Latitude.	Longitude.	Males.	Females.	Total.
1894.	N.	W.			
Aug. 4	57 50	173 56	4	8	12
6	58 30	173 56	4	15	19
7	58 30	173 56	4	30	34
10	58 27	172 46	1	3	4
11	57 42	172 52	3	10	13
18	56 05	172 17	2	....	2
Total	....	....	16	68	84

CANADIAN SCHOONER ROSIE OLSEN (BERING SEA).

Date.	Latitude.	Longitude.	Males.	Females.	Total.
1894.	N.	W.			
Aug. 13	57 07	174 42	....	1	1
16	57 05	174 18	....	1	1
17	56 47	174 34	3	1	4
18	56 40	174 38	8	12	20
22	56 56	174 42	7	8	15
27	57 47	173 00	2	1	3
28	58 00	173 00	49	68	117
29	57 58	173 17	7	4	11
30	58 01	172 44	2	6	8
Sept. 1	58 01	172 50	20	29	49
2	58 08	173 10	20	49	69
5	57 47	173 20	8	13	21
6	58 09	173 48	18	12	30
7	58 13	173 36	36	40	76

Positions where fur seals were taken by American and Canadian vessels in Bering Sea and the North Pacific Ocean in 1894—Continued.

CANADIAN SCHOONER ROSIE OLSEN (BERING SEA)—Continued.

Date.	Latitude.	Longitude.	Males.	Females.	Total.
1894.	N.	W.			
Sept. 8	58 13	173 39	20	10	30
9	58 11	173 11	24	29	53
10	58 15	173 09	17	12	29
12	57 50	173 09	11	8	19
14	57 56	173 16	58	35	93
16	58 05	173 08	34	28	62
18	57 56	173 22	4	1	5
19	57 47	173 25	76	59	135
20	57 47	173 21	1	4	5
Total			425	431	856

CANADIAN SCHOONER UMBRINA (BERING SEA).

1894.	N.	W.			
Aug. 7	57 40	176 45	1		1
9	58 20	172 55		2	2
10	57 53	172 32	2	6	8
18	58 07	172 50	7	15	22
22	53 12	172 00	20	7	27
Total			30	30	60

CANADIAN SCHOONER ARIETIS (BERING SEA).

1894.	N.	W.			
Aug. 4	56 26	172 14	7	13	20
5	56 22	172 14		2	2
6	56 02	171 56	2	5	7
7	56 26	172 14	10	16	26
8	56 02	171 56	5	1	6
10	55 38	172 50		3	3
11	55 08	171 07	2	1	3
12	54 08	170	4	1	5
13	54 50	168 33	1		1
15	54 41	166 59	8	10	18
Total			39	52	91

CANADIAN SCHOONER WALTER A. EARLE (BERING SEA).

1894.	N.	W.			
Aug. 1	56 00	172 35	1	9	10
3	56 17	172 00		3	3
4	56 13	172 00	15	30	45
6	56 00	172 41	10	25	35
7	57 58	172 26	20	12	32
10	57 10	173 26	16	20	36
18	56 00	172 29	15	32	47
22	56 12	172 15	9	12	21
28	56 27	173 33	26	80	106
29	56 24	173 38		26	26
30	56 52	173 38	2	20	22
Sept. 1	56 23	173 48	5	30	35
2	56 43	174 16	8	60	68
5	56 43	173 52	6	16	22
6	56 43	173 52	7	18	25
7	56 19	172 58		20	20
8	56 14	173 00	2	50	52
9	56 21	172 55		14	14
10	55 58	172 54	13	40	53
Total			155	517	672

Positions where fur seals were taken by American and Canadian vessels in Bering Sea and the North Pacific Ocean in 1894—Continued.

CANADIAN SCHOONER FAWN (BERING SEA).

Date.	Latitude.		Longitude.		Males.	Females.	Total.
1894.	N.		W.				
Aug. 3	56	05	172	02	2	....	2
4	56	35	172	05	10	4	14
5	57	18	172	40	2	3	5
6	57	35	173	30	3	12	15
7	58	10	173	30	15	16	31
9	58	05	173	23	4	9	13
10	57	50	173	03	14	24	38
11	57	42	172	50	12	3	15
16	55	59	172	17	....	3	3
18	55	47	172	11	4	27	31
22	55	54	172	12	10	18	28
23	56	21	172	41	4	....	4
27	55	37	171	17	5	24	29
28	55	36	171	28	12	23	35
29	55	36	171	38	41	18	59
30	55	32	171	42	28	6	34
31	55	38	171	11	14	9	23
Sept. 1	55	00	170	16	18	23	41
2	54	30	170	00	....	3	3
5	54	52	168	47	31	13	44
6	54	56	168	13	4	....	4
7	55	19	167	55	24	35	59
9	55	25	168	26	22	27	49
10	55	21	168	36	8	6	14
12	55	13	169	09	....	6	6
13	55	08	169	21	7	16	23
14	55	00	169	08	7	3	10
15	55	10	169	06	9	5	14
Total	....		....		310	336	646

CANADIAN SCHOONER MARY ELLEN (BERING SEA).

Date.	Latitude.		Longitude.		Males.	Females.	Total.
1894.	N.		W.				
Aug. 6	57	10	173	29	1	4	5
7	57	16	173	26	1	5	6
8	57	30	173	35	1	4	5
10	56	26	172	59	8	15	23
11	56	26	172	59	4	14	18
22	56	42	173	04	2	8	10
23	56	42	173	04	9	13	22
25	57	04	173	10	....	2	2
27	57	10	173	12	3	12	15
28	57	10	173	12	11	33	44
29	57	10	173	12	1	7	8
30	57	10	173	12	2	11	13
Sept. 1	57	22	173	16	6	22	28
2	57	22	173	16	8	37	45
5	57	22	173	16	4	18	22
6	57	22	173	16	11	41	52
7	57	46	173	22	10	37	47
8	57	46	173	22	9	44	53
9	57	52	173	27	12	17	29
10	57	52	173	27	2	8	10
Total	....		....		105	352	457

CANADIAN SCHOONER VERA (BERING SEA).

Date.	Latitude.		Longitude.		Males.	Females.	Total.
1894.	N.		W.				
Aug. 7	56	26	173	17	....	4	4
8	56	25	173	17	....	1	1
9	55	57	172	30	1	....	1
10	55	57	172	30	3	4	7
11	55	50	172	58	6	5	11
13	55	04	172	35	9	1	10
17	54	30	168	30	....	1	1
18	54	30	167	56	33	80	113
19	54	24	167	46	....	2	2
22	54	17	167	37	3	1	4
23	54	23	168	03	13	10	23
24	54	30	168	07	12	6	18
Total	....		....		80	115	195

Positions where fur seals were taken by American and Canadian vessels in Bering Sea and the North Pacific Ocean in 1894—Continued.

CANADIAN SCHOONER TRIUMPH (BERING SEA).

Date.	Latitude.	Longitude.	Males.	Females.	Total.
1894.	N.	W.			
Aug. 1	55 33	172 32	28	87	115
2	55 47	171 50	35	78	113
4	56 03	172 50	90	90	180
5	56 53	172 50	4	6	10
6	56 58	173 25	30	15	45
7	56 58	173 30	50	62	112
8	57 06	173 30	5	13	18
9	57 15	173 40	....	5	5
10	56 29	173 05	30	70	100
11	56 25	173 06	20	36	56
15	55 46	171 59	4	11	15
19	55 30	171 30	15	25	37
22	54 38	168 50	80	63	143
23	54 32	168 25	50	58	108
24	54 30	168 29	38	51	89
25	54 38	168 20	10	12	22
26	54 30	168 12	20	30	50
27	54 40	168 00	70	93	163
28	54 53	167 50	80	98	178
29	54 46	168 40	50	117	167
30	54 54	167 58	42	83	125
31	55 00	168 18	26	35	61
Sept. 1	54 57	168 12	80	244	324
2	55 01	168 20	40	83	123
4	55 04	168 30	7	19	26
5	55 09	168 20	53	90	143
6	55 20	168 55	97	207	304
7	55 18	169 09	17	38	55
8	55 05	169 09	40	87	127
9	55 20	169 08	53	157	210
10	55 20	169 08	2	14	16
Total	....	....	1,163	2,077	3,240

CANADIAN SCHOONER SAPPHIRE (BERING SEA).

1894.	N.	W.			
Aug. 1	54 58	170 59	53	42	95
2	54 55	171 20	31	38	69
3	55 01	171 16	9	8	17
4	55 50	172 01	41	42	83
5	56 00	171 51	33	13	46
6	57 03	173 59	12	7	19
7	57 03	173 04	18	19	37
8	57 40	173 30	2	4	6
10	56 26	172 42	25	56	81
11	56 16	172 30	25	21	46
13	55 32	171 49	5	13	18
15	55 17	168 48	30	45	75
18	54 50	169 20	21	50	71
19	55 00	168 39	8	20	28
22	54 49	167 43	10	2	12
23	54 46	167 42	66	59	125
24	54 57	167 45	50	33	83
25	55 00	168 06	6	....	6
26	54 57	168 47	10	6	16
27	54 58	168 45	70	83	153
28	54 39	169 02	41	20	61
29	54 50	169 04	60	26	86
30	54 53	168 09	112	45	157
31	55 09	168 13	8	3	11
Sept. 1	55 13	168 05	110	64	174
2	55 11	168 37	42	25	67
4	55 00	168 48	8	4	12
5	54 57	168 18	98	30	128
6	55 13	168 21	12	4	16
7	55 05	168 03	28	9	37
8	54 50	168 02	3	....	3
9	54 55	168 01	62	49	111
10	55 09	168 09	1	....	1
11	54 40	168 40	2	....	2
13	55 03	168 58	31	11	42
15	54 52	168 23	20	4	24
16	55 09	167 04	4	1	5
17	55 23	167 02	24	16	40
18	55 05	166 11	14	....	14
19	54 10	164 38	21	7	28
Total	....	....	1,226	879	2,105

Positions where fur seals were taken by American and Canadian vessels in Bering Sea and the North Pacific Ocean in 1894—Continued.

CANADIAN SCHOONER AURORA (BERING SEA).

Date.	Latitude.	Longitude.	Males.	Females.	Total.
1894.	N.	W.			
Aug. 6	56 23	173 40	4	9	13
7	56 30	174 00	10	12	22
8	56 25	173 35	1	22	23
9	56 45	173 35	6	1	7
10	56 12	172 43	20	17	37
11	56 17	173 10	3	10	13
13	56 40	173 22	....	9	9
15	53 55	170 56	12	22	34
16	54 04	168 00	16	22	38
18	55 28	166 00	3	5	8
19	55 18	166 01	4	8	12
23	53 18	159 00	....	1	1
Total	....	....	79	138	217

CANADIAN SCHOONER BEATRICE, OF SHANGHAI (BERING SEA).

1894.	N.	W.			
Aug. 1	54 49	166 35	3	10	13
3	55 14	170 34	1	6	7
4	54 59	170 16	55	136	191
5	54 53	170 23	10	79	89
7	54 50	170 49	14	72	86
8	54 45	170 44	19	23	42
9	54 25	170 53	11	6	17
10	54 19	171 27	18	6	24
11	54 32	171 49	15	14	29
12	54 54	171 30	2	8	10
15	54 46	170 18	4	6	10
17	55 03	171 06	....	6	6
18	54 52	171 00	6	48	54
19	54 58	170 53	3	4	7
23	55 12	169 27	1	14	15
25	54 57	171 01	7	13	20
27	54 34	171 34	7	43	50
28	54 32	171 36	2	21	23
29	55 22	171 32	5	16	21
30	55 08	170 40	10	40	50
31	55 01	170 31	3	5	8
Sept. 1	54 41	170 24	30	82	112
2	54 49	170 02	3	3	6
5	54 24	168 41	5	4	9
6	54 57	170 14	6	13	19
8	54 56	167 35	5	11	16
9	54 55	167 28	20	75	95
10	55 08	167 37	3	....	3
13	54 36	167 14	15	13	28
14	54 37	166 55	12	3	15
15	54 39	167 03	19	20	39
16	54 53	166 44	3	....	3
17	55 09	167 04	20	16	36
18	54 51	166 42	4	2	6
19	54 22	166 36	1	....	1
Total	....	....	342	818	1,160

CANADIAN SCHOONER MASCOT (BERING SEA).

1894.	N.	W.			
Aug. 1	55 06	168 20	18	5	23
2	54 40	167 20	2	4	6
3	54 20	167 10	1	2	3
9	55 34	171 33	2	3	5
10	55 40	171 15	33	22	55
11	56 10	172 00	11	7	18
22	56 05	171 15	12	10	22
28	57 56	173 29	31	26	57
29	57 56	173 29	4	7	11
30	57 50	173 11	5	4	9
Sept. 1	57 47	173 15	16	25	41
2	57 49	173 13	15	35	50
5	58 03	173 46	18	12	30

Positions where fur seals were taken by American and Canadian vessels in Bering Sea and the North Pacific Ocean in 1894—Continued.

CANADIAN SCHOONER MASCOT (BERING SEA)—Continued.

Date.	Latitude.	Longitude.	Males.	Females.	Total.
1894.	N.	W.			
Sept. 6	58 02	174 00	11	11	22
7	58 04	173 50	39	19	58
8	58 14	173 45	21	19	40
9	58 02	173 35	16	4	20
12	58 00	173 35	23	20	43
	(*a*)	(*a*)	21	11	32
Total	....	....	299	246	1, 103

a Canoe lost and picked up by schooner *Wanderer* with 32 skins.

CANADIAN SCHOONER FAVORITE (BERING SEA).

1894.	N.	W.			
Aug. 1	54 40	166 20	98	64	162
2	55 05	168 05	....	2	2
3	55 13	168 20	49	30	79
4	55 03	168 40	150	67	217
5	55 40	173 00	70	52	122
7	55 40	173 30	60	14	74
8	56 46	173 15	10	13	23
10	56 26	173 20	50	48	98
11	56 26	169 46	25	25	50
15	54 41	169 18	25	22	47
18	54 21	169 10	60	28	88
19	54 25	168 00	39	30	69
22	54 39	168 10	40	24	64
23	54 39	168 10	67	60	127
24	54 38	169 29	9	9	18
Total	....	....	752	488	1, 240

CANADIAN SCHOONER ANNIE C. MOORE (BERING SEA).

1894.	N.	W.			
Aug. 1	57 50	173 00	24	24	48
2	57 50	172 48	11	13	24
3	57 50	173 00	12	14	26
4	58 00	172 45	40	20	60
5	58 00	173 00	3	5	8
9	57 55	173 00	25	15	40
10	58 00	173 00	95	95	190
11	58 00	173 00	50	66	116
13	58 10	173 10	10	29	39
15	57 50	173 00	10	8	18
16	57 55	173 05	5	4	9
18	55 40	172 00	10	38	48
22	56 45	172 30	50	56	106
23	57 00	172 40	15	20	35
26	57 50	173 04	9	8	17
28	57 56	173 10	112	110	222
29	58 00	173 10	28	31	59
30	58 03	175 00	30	29	59
Sept. 1	57 55	173 15	50	52	102
2	58 05	173 07	70	80	150
5	58 00	173 30	60	70	130
6	58 00	173 30	28	23	51
7	58 03	173 22	100	90	190
8	58 10	173 10	40	48	88
9	58 15	173 20	21	20	41
10	58 20	173 10	30	41	71
Total	....	....	938	1, 009	1, 947

Positions where fur seals were taken by American and Canadian vessels in Bering Sea and the North Pacific Ocean in 1894—Continued.

CANADIAN SCHOONER LABRADOR (BERING SEA).

Date.	Latitude.	Longitude.	Males.	Females.	Total.
1894.	N.	W.			
Aug. 3	55 05	167 00	3	10	13
4	55 00	167 10	12	70	82
5	54 32	166 20	27	10	37
6	54 40	167 00	10	16	26
8	55 13	166 45	4	14	18
9	55 04	167 25	1	7	8
10	54 50	167 05	20	32	52
12	54 55	167 20	48	100	148
16	54 45	167 24	1	2	3
18	54 40	167 30	33	100	133
19	54 25	167 10	20	20	40
Total			179	381	560

CANADIAN SCHOONER SAUCY LASS (BERING SEA).

1894.	N.	W.			
Aug. 6	54 28	166 44	7	9	16
22	54 28	172 13	25	39	64
27	55 08	169 01	6	10	16
28	54 30	168 16	29	25	54
30	54 44	167 42	40	69	109
Sept. 1	55 09	167 33	90	109	199
2	54 56	167 40	7	9	16
5	55 24	166 52	6	10	16
8	54 56	167 49	8	6	14
9	55 07	167 30	20	26	46
10	55 23	167 54	5	7	12
13	54 52	167 40	8	10	18
15	55 05	167 30	25	27	52
16	54 51	167 14	8	12	20
18	54 05	166 40	6	10	16
Total			290	378	668

CANADIAN SCHOONER BOREALIS (BERING SEA).

1894.	N.	W.			
Aug. 1	57 36	166 43		3	3
3	56 04	167 22		6	6
4	56 12	167 21	4	28	32
5	56 05	167 22	4	33	37
7	55 33	170 25	2	184	186
8	55 27	170 21	3	25	28
9	55 26	170 14	5	33	38
10	55 27	170 55	6	198	204
11	55 36	171 00	3	38	41
12	55 20	171 00	1	4	5
14	55 26	171 09		1	1
15	55 32	170 36	1	19	20
18	55 27	169 54	4	41	45
19	55 30	170 36	1	1	2
22	55 31	170 04		1	1
23	55 44	171 15	1	2	3
25	56 34	172 20		2	2
27	56 37	172 11		6	6
28	56 50	172 49	6	89	95
29	56 49	172 49	1	26	27
30	56 33	172 33		8	8
Sept. 1	55 30	170 05	4	77	81
4	55 35	168 30		1	1
5	54 59	168 42	9	48	57
6	55 06	168 33	12	74	86
7	55 02	168 10	7	49	56
12	55 20	169 41	16	62	78
Total			90	1,059	1,149

Positions where fur seals were taken by American and Canadian vessels in Bering Sea and the North Pacific Ocean in 1894—Continued.

CANADIAN SCHOONER KATHERINE (BERING SEA).

Date.	Latitude.	Longitude.	Males.	Females.	Total.
1894.	N.	W.			
Aug. 1	56 05	173 09	2	2	4
2	56 23	172 57	20	13	33
4	56 30	173 17	40	21	61
6	56 35	174 09	3	20	23
7	56 30	173 30	28	31	59
8	56 25	173 10	3	4	7
9	56 27	173 00	5	9	14
10	56 20	172 01	16	100	116
11	56 20	172 10	50	11	61
13	56 25	172 50	1	3	4
16	56 18	173 11	2	8	10
17	56 14	173 15	8	4	12
18	56 16	172 45	9	24	33
19	56 18	172 22	5	12	17
25	56 05	172 16	8	54	62
26	56 30	174 00	1	3	4
27	54 20	168 30	30	4	34
28	54 10	168 25	38	51	89
29	54 16	168 35	6	42	48
30	54 22	167 40	57	37	94
31	54 15	167 45	20	25	45
Sept. 1	54 20	167 30	105	52	157
2	54 40	167 25	13	24	37
3	54 25	167 20	....	2	2
5	54 35	167 06	20	13	33
Total	....	....	490	569	1,059

CANADIAN SCHOONER AINOKO (BERING SEA).

1894.	N.	W.			
Aug. 1	54 56	171 12	8	1	9
2	55 05	171 49	20	6	26
4	55 07	172 44	60	41	101
6	56 42	173 54	13	9	22
7	56 55	173 30	14	13	27
8	56 48	173 34	12	4	16
9	56 50	173 28	5	3	8
10	56 35	173 13	15	12	27
11	56 37	172 40	18	....	18
17	54 29	168 59	5	....	5
18	54 30	168 45	42	24	66
19	54 23	169 12	35	6	41
23	55 05	167 31	70	45	115
24	54 47	169 02	25	24	49
25	55 03	168 08	10	6	16
26	54 42	167 42	7	5	12
27	54 35	167 33	62	58	120
28	54 45	168 39	75	43	118
29	54 34	168 19	62	18	80
30	54 57	168 06	61	18	79
31	54 12	168 13	5	12	17
Sept. 1	54 23	168 27	107	65	172
2	54 28	168 43	8	20	28
4	54 31	168 30	1	3	4
5	54 23	168 43	69	26	95
6	55 00	168 35	32	20	52
7	55 05	168 37	14	25	39
8	55 16	168 42	76	10	86
9	55 07	168 06	30	7	37
13	54 53	168 27	10	1	11
14	55 04	168 08	45	10	55
15	55 07	168 01	68	30	98
17	54 27	166 23	8	....	8
Total	....	....	1,092	565	1,657

Positions where fur seals were taken by American and Canadian vessels in Bering Sea and the North Pacific Ocean in 1894—Continued.

CANADIAN SCHOONER KATE (BERING SEA).

Date.		Latitude.	Longitude.	Males.	Females.	Total.
1894.		N.	W.			
Aug.	3	55 56	167 31	1	5	6
	4	56 21	167 28	1	20	21
	5	57 37	166 43	1	14	15
	7	58 40	167 48	....	1	1
	10	58 03	172 00	4	11	15
	11	58 01	172 30	4	7	11
	15	55 29	171 14	....	8	8
	18	55 05	170 20	5	38	43
	22	54 41	168 50	29	54	83
	23	54 37	169 00	36	67	103
	25	54 51	167 56	3	3	6
	26	54 47	168 42	....	9	9
	27	54 49	169 06	31	62	93
	28	54 36	169 24	15	45	60
	29	54 31	168 43	1	3	4
	30	54 39	168 41	10	44	54
	31	54 45	167 59	3	3	6
Sept.	1	54 58	168 03	52	40	92
	2	54 29	168 25	8	11	19
	4	54 18	167 40	1	1	2
	5	54 42	167 37	12	12	24
	6	54 45	168 23	....	2	2
	7	55 05	168 56	9	10	19
	8	54 32	169 00	15	13	28
	9	54 45	168 35	12	19	31
	12	54 50	167 37	1	....	1
	13	54 47	167 39	12	15	27
	14	54 47	167 39	8	10	18
	15	54 41	167 33	25	34	59
	16	54 35	165 24	4	3	7
Total		....	....	303	564	867

CANADIAN SCHOONER VENTURE (BERING SEA).

Date.		Latitude.	Longitude.	Males.	Females.	Total.
1894.		N.	W.			
Aug.	1	54 36	163 37	9	11	20
	2	55 02	166 18	....	1	1
	3	55 00	167 11	5	7	12
	4	55 24	167 17	21	31	52
	5	55 14	167 36	4	6	10
	6	55 28	167 14	....	1	1
	7	55 26	168 15	....	2	2
	8	55 12	168 50	1	2	3
	11	55 05	169 55	5	6	11
	12	54 49	169 55	44	34	78
	15	54 38	170 08	6	9	15
	18	54 48	169 43	16	13	29
	19	54 53	169 46	5	7	12
	22	54 23	168 27	47	63	110
	23	54 23	168 20	5	13	18
	24	54 24	168 05	16	24	40
	27	54 33	168 13	19	41	60
	28	54 38	168 14	27	42	69
	29	54 36	168 18	14	21	35
	30	54 31	168 19	13	19	32
	31	54 50	168 11	21	17	38
Sept.	1	54 46	168 08	74	87	161
	2	54 59	168 01	5	3	8
	5	54 43	168 04	12	7	19
	7	54 37	167 58	3	1	4
	9	54 35	168 12	13	5	18
	13	54 49	168 36	5	2	7
	14	54 38	168 20	2	1	3
	15	54 39	167 51	24	16	40
	18	54 26	161 07	1	....	1
Total		....	....	417	492	909

Positions where fur seals were taken by American and Canadian vessels in Bering Sea and the North Pacific Ocean in 1894—Continued.

CANADIAN SCHOONER WALTER L. RICH (BERING SEA).

Date.	Latitude.	Longitude.	Males.	Females.	Total.
1894.	N.	W.			
Aug. 1	55 05	166 48	1	23	24
3	55 17	166 51	3	7	10
4	55 17	166 51	53	50	103
5	55 10	167 10	10	4	14
6	55 00	166 36	20	5	25
10	55 15	167 44	37	19	56
12	55 11	167 59	96	80	176
15	55 05	167 10	73	6	79
16	55 12	167 20	12	2	14
18	54 56	167 45	143	36	179
19	55 00	167 30	60	4	64
23	54 58	168 20	87	16	103
24	54 40	168 44	12	22	34
25	54 48	168 10	3	25	28
26	54 53	168 00	12	31	43
27	55 05	168 10	3	32	35
28	54 35	168 10	30	75	105
29	54 35	168 15	40	45	85
30	54 42	167 45	32	14	46
31	54 36	168 34	60	34	94
Sept. 1	54 40	167 50	133	145	278
2	54 40	168 22	21	9	30
5	54 50	166 54	53	60	113
6	54 40	166 25	6	5	11
Total			1,000	749	1,749

CANADIAN SCHOONER MINNIE (BERING SEA).

1894.	N.	W.			
Aug. 1	54 48	165 51	20	45	65
3	54 37	165 31	2	1	3
4	55 12	165 07	16	28	44
5	55 28	166 29	....	1	1
6	55 03	166 44	18	23	41
7	54 50	166 30	21	55	76
8	54 55	166 31	7	6	13
10	54 43	166 14	....	1	1
11	54 44	165 29	31	41	72
12	54 51	165 30	24	63	87
15	54 23	168 30	12	27	39
16	54 52	168 24	....	1	1
17	54 47	168 13	....	1	1
18	54 54	168 00	47	114	161
19	54 53	168 07	12	44	56
22	54 31	167 39	4	14	18
23	54 48	167 34	15	58	73
24	55 09	168 00	18	50	68
25	54 59	168 23	....	1	1
26	54 39	168 03	14	3	17
27	55 05	167 42	33	20	53
28	55 04	167 39	81	60	141
29	54 55	167 35	103	90	193
30	54 54	167 49	58	30	88
31	55 06	167 55	10	12	22
Sept. 1	55 09	167 36	76	116	192
2	55 16	167 51	12	9	21
7	55 20	168 00	10	15	25
8	55 14	167 41	8	10	18
9	55 02	167 30	6	11	17
10	55 52	167 25	1	2	3
12	55 08	167 22	1	....	1
13	55 07	167 19	14	20	34
15	55 02	168 08	5	9	14
a)	....	....	....	5	5
Total	....	....	679	986	1,665

a Boat of schooner *Minnie* picked up by schooner *Favorite* with 5 skins.

Positions where fur seals were taken by American and Canadian vessels in Bering Sea and the North Pacific Ocean in 1894—Continued.

CANADIAN SCHOONER SAN JOSE (BERING SEA).

Date.	Latitude.	Longitude.	Males.	Females.	Total.
1894.	N.	W.			
Aug. 3	54 54	166 28	2	2	4
4	54 54	166 28	10	74	84
5	55 01	167 05	8	15	23
6	55 01	167 23	12	20	32
8	55 12	168 15	4	5	9
10	55 04	169 04	2	1	3
11	55 02	170 37	2	1	3
12	55 13	170 55	3	2	5
18	55 11	168 10	8	3	11
19	54 25	166 34	30	13	43
23	54 56	166 44	15	8	23
24	54 54	167 33	13	4	17
25	55 29	168 00	....	1	1
26	55 10	166 54	....	2	2
27	54 57	167 13	....	26	26
28	54 55	167 30	3	40	43
29	55 01	167 11	6	20	26
30	55 04	167 50	14	40	54
31	54 57	168 06	4	9	13
Sept. 1	55 11	168 36	7	50	57
2	55 13	168 36	9	20	29
4	55 17	168 10	4	9	13
5	55 15	168 55	20	50	70
6	55 15	169 20	43	80	123
7	55 14	169 24	1	2	3
8	55 00	169 00	10	20	30
9	55 05	168 10	14	40	54
10	55 16	168 25	3	7	10
11	54 48	169 03	1	2	3
13	54 35	166 36	4	18	22
15	54 28	166 00	4	9	13
Total	....	....	256	593	849

CANADIAN SCHOONER KILMENY (BERING SEA).

Date.	Latitude.	Longitude.	Males.	Females.	Total.
1894.	N.	W.			
Aug. 6	55 30	165 00	8	11	19
8	55 00	166 00	7	2	9
9	55 10	165 00	1	....	1
10	55 00	167 00	6	7	13
11	55 55	166 30	2	....	2
13	55 30	167 00	50	43	93
18	55 12	167 00	2	3	5
20	55 10	167 40	50	59	109
22	55 00	167 00	10	11	21
23	55 00	165 00	4	4	8
24	55 10	166 00	20	15	35
25	54 40	166 25	4	8	12
28	54 20	168 20	4	2	6
29	54 40	167 00	53	43	96
30	54 50	167 20	4	40	44
31	54 30	167 40	4	10	14
Sept. 1	54 30	167 30	40	34	74
2	54 35	167 28	29	9	38
7	54 40	167 15	1	4	5
8	54 10	167 15	3	6	9
9	54 35	167 20	3	10	13
10	54 40	167 05	....	2	2
13	54 00	166 03	1	2	3
15	53 15	165 10	1	2	3
Total	....	....	307	327	634

Positions where fur seals were taken by American and Canadian vessels in Bering Sea and the North Pacific Ocean in 1894—Continued.

CANADIAN SCHOONER HENRIETTA (BERING SEA).

Date.	Latitude.	Longitude.	Males.	Females.	Total.
1894.	N.	W.			
Aug. 18	54 50	166 20	8	15	23
19	55 00	166 30	15	24	39
24	55 46	166 30	18	21	39
28	54 40	168 46	12	11	23
29	54 16	169 19	100	20	120
30	54 05	169 27	21	5	26
31	54 47	169 16	12	15	27
Sept. 1	54 57	168 53	120	65	185
2	54 56	169 10	40	21	61
5	55 02	168 52	20	31	51
6	55 15	168 40	10	32	42
7	55 00	169 36	3	4	7
8	55 05	169 34	3	9	12
9	55 10	168 56	20	33	53
15	54 40	167 00	25	34	59
Total			427	340	767

CANADIAN SCHOONER SHELBY (BERING SEA).

1894.	N.	W.			
Aug. 7	54 40	167 32	4	4	8
8	54 50	168 14	3	2	5
10	55 14	170 32	27	28	55
11	55 20	170 44	3	1	4
13	55 41	171 50	2	3	5
15	55 38	171 07	1	2	3
18	55 52	172 35	2	5	7
22	55 05	171 54	7	2	9
26	56 32	171 55		1	1
27	56 10	172 58	10	3	13
28	56 20	172 02	24	11	35
29	56 19	170 03	4		4
31	55 28	170 59	4	3	7
Sept. 1	55 19	170 38	10	4	14
2	55 14	170 31	16	6	22
5	55 32	169 46	2	1	3
6	55 32	170 37	17	14	31
7	55 23	170 34	4	3	7
8	55 06	170 30	30	26	56
9	55 13	170 18	28	15	43
17	55 32	169 14	16	3	19
19	55 28	170 11	13	3	16
20	55 21	170 07	5	5	10
Total			232	145	377

Positions where fur seals were taken in 1894 off the Japan coast by Canadian and American vessels.

[Data collected by C. H. Townsend and A. B. Alexander.]

CANADIAN SCHOONER UMBRINA (JAPAN COAST), CAMPBELL, MASTER.

Date.	Latitude.	Longitude.	Seals.
1893.	N.	W.	
Dec. 28	43 40	141 00	31
29	43 40	142 00	
1894.			
Jan. 1	41 24	150 00	
5	40 19	146 10	
15	39 06	173 55	
		E.	
Mar. 17	37 20	145 04	17
18	37 13	143 04	5
19	37 30	144 37	1
21	37 05	146 40	90
22	37 12	146 20	11
23	37 16	146 27	67
24	37 10	145 15	90
25	37 20	145 35	60
26	37 40	146 19	56
Apr. 1	37 40	146 07	79
2	37 25	146 00	135
3	37 15	145 38	88
4	37 20	142 20	48
5	37 10	......	......
6	37 20	145 40	42
7	37 17	145 26	103
8	37 35	145 33	41
11	37 24	145 40	18
12	37 27	146 05	57
13	37 20	146 00	74
16	37 30	146 08	23
17	37 12	145 50	1
18	37 14	145 45	15
19	37 19	146 00	91
20	37 16	146 03	33
22	36 55	145 50	58
23	37 06	145 45	33
1894—Continued.	N.	E.	
Apr. 26	36 40	146 25	84
27	36 48	146 ..	14
28	36 50	(*a*)	1
29	37 34	146 23	19
30	37 35	145 55	16
May 1	36 56	145 55	70
3	36 40	145 47	19
12	37 40	146 50	104
14	37 49	146 58	21
15	37 51	147 26	119
18	37 16	145 00	1
21	38 11	146 35	61
22	38 22	146 25	51
23	38 37	146 10	57
24	38 36	146 20	9
26	40 11	144 46	27
28	41 50	144 12	7
29	41 35	145 00	2
31	43 03	147 30	6
June 5	41 23	145 40	5
6	40 55	145 56	92
7	.. 29	146 10	11
8	40 37	146 02	31
9	40 45	145 50	79
10	40 46	145 52	55
12	40 30	145 41	36
13	40 40	146 00	......
14	41 09	145 37	4
15	41 02	145 55	8
16	40 00	145 55	1
17	41 57	146 08	15
18	43 10	147 12	2
19	43 41	147 30	81
21	43 45	147 05	9
22	43 40	147 10	11

a No observation.

AMERICAN SCHOONER EDWARD E. WEBSTER (JAPAN COAST), McLEAN, MASTER.

1894.	N.	E.	
Jan. 29	37 46	146 15	29
Feb. 2	38 00	144 40	30
5	36 35	145 00	17
17	38 30	146 00	61
24	36 30	145 46	27
Mar. 5	37 32	144 35	25
15	38 01	146 16	31
19	38 10	145 30	36
21	38 00	146 10	47
23	37 20	145 27	65
24	37 20	145 30	57
26	38 31	146 18	28
Apr. 1	37 11	145 21	61
2	37 07	145 35	58
3	37 02	145 25	40
4	37 06	145 20	17
5	36 56	145 40	29
8	37 15	146 10	33
10	38 00	146 03	26
11	39 10	145 51	47
12	39 10	145 51	73
1894.	N.	E.	
Apr. 16	40 00	144 20	27
18	37 40	145 25	17
19	37 40	145 07	128
22	36 57	145 00	84
26	36 44	144 33	101
May 23	40 00	144 00	17
24	40 10	144 08	21
30	39 52	143 30	41
June 1	41 04	142 20	29
3	41 42	142 30	24
6 *a*	....	....	38
8	41 14	143 18	18
10	41 10	143 15	22
13	41 24	142 36	24
		W.	
28	42 02	179 02	30
29	42 04	178 15	7
July 1	42 12	177 20	17
2	43 30	177 00	11
8	42 56	175 15	27
9	43 15	174 44	38

a Cape Yerimo east 25 miles.

Positions where fur seals were taken in 1894 off the Japan coast by Canadian and American vessels—Continued.

AMERICAN SCHOONER ALLIE I. ALGAR (JAPAN COAST), WESTER, MASTER.

Date.	Latitude.	Longitude.	Seals.	Date.	Latitude.	Longitude.	Seals.
1894.	N.	E.		1894.	N.	E.	
Mar. 23	39 22	144 23	8	May 12	41 57	143 08	17
24	39 45	142 57	37	13	42 05	142 38	28
26	40 00	144 00	23	14	41 35	142 40	31
29	39 12	143 13	2	21	42 50	143 50	6
31	40 00	144 00	36	24	42 35	144 56	50
Apr. 1	39 54	144 17	17	25	(*a*)	(*a*)	8
3	39 15	144 06	78	26	(*a*)	(*a*)	30
4	39 25	144 24	32	29	(*a*)	(*a*)	7
6	39 28	143 31	16	June 1	(*a*)	(*a*)	34
8	39 25	143 10	47	6	43 16	147 00	12
18	39 29	142 54	38	7	(*a*)	(*a*)	34
23	39 27	142 21	10	8	(*a*)	(*a*)	32
24	39 51	142 00	3	9	(*b*)	(*b*)	102
25	40 15	142 23	29	10	(*b*)	(*b*)	22
26	40 13	143 00	40	12	(*b*)	(*b*)	67
27	(*a*)	(*a*)	2	18	(*b*)	(*b*)	20
30	40 03	143 06	26	19	(*b*)	(*b*)	19
May 2	(*a*)	(*a*)	45	July 23	53 48	167 32	2
3	(*a*)	(*a*)	11	24	53 57	168 56	6
7	41 39	142 05	47	25	55 02	169 59	3
11	41 36	143 20	25	26	55 36	169 13	4

a No position. *b* Ten miles off Scoutan Island.

AMERICAN SCHOONER LOUIS OLSEN (JAPAN COAST), GUILLAMS, MASTER.

1894.	N.	E.		1894.	N.	E.	
Mar. 12	36 26	145 23	1	May 16	40 55	142 58	3
13	36 17	145 43	7	17	41 45	143 35	35
15	36 23	147 41	67	19	41 37	143 03	65
17	38 36	147 52	14	20	41 57	142 27	19
19	37 40	146 15	42	21	(*a*)	(*a*)	50
21	37 47	144 22	6	24	41 00	143 00	30
Apr. 1	38 16	146 46	54	25	41 47	142 28	3
2	38 22	147 39	50	28	42 38	142 54	7
3	39 20	146 05	15	30	42 42	144 58	15
4	38 59	146 46	8	31	42 38	144 38	63
5	38 34	145 47	39	June 1	42 46	145 03	35
6	38 20	145 50	30	2	42 38	143 57	10
8	38 08	144 52	24	3	42 37	144 06	5
12	40 13	144 18	10	4	42 22	144 30	10
18	37 06	145 56	5	5	42 52	144 53	3
19	37 02	146 03	53	6	42 59	144 57	12
20	37 30	146 20	28	7	42 55	145 28	12
22	37 08	146 39	8	8	42 42	145 56	11
23	37 18	146 03	33	9	42 37	145 59	33
26	36 15	146 26	60	10	42 56	146 08	2
28	36 41	146 09	8				
29	37 14	146 15	5	Total			*b* 1, 055
30	37 01	146 05	29				
May 1	35 54	144 43	36				

a Cape Yerimo SE. by E. 28 miles.

b Fifty-seven seals additional belong to the catch; they were taken by the boats that went astray and were picked up by the *Penelope*, making the total catch 1,112.

Positions where fur seals were taken in the North Pacific Ocean and Bering Sea in 1895.

[From official sources.]

AMERICAN SCHOONER J. EPPINGER (BERING SEA), MICHAEL WHITE, MASTER.

Date.	Latitude.	Longitude.	Males.	Females.	Total.
1895.	N.	W.			
Aug. 1	54 55	167 47	6	5	11
2	55 07	167 27	3	5	8
4	54 58	167 16	1	3	4
9	54 59	167 40	1	....	1
10	54 40	167 30	8	42	50
11	54 46	167 46	13	48	61
12	54 54	167 47	1	3	4
14	55 17	168 00	1	4	5
15	54 55	168 01	12	23	35
16	54 35	168 35	....	1	1
17	54 38	168 40	13	22	35
18	54 35	168 35	....	2	2
19	54 30	168 30	....	1	1
20	54 46	167 52	8	27	35
21	54 46	167 52	7	16	23
22	54 17	167 51	7	16	23
24	55 23	169 00	2	3	5
25	55 07	173 40	10	22	32
26	56 08	173 50	5	11	16
27	57 04	173 03	7	10	17
28	56 44	173 25	....	1	1
Sept. 1	56 40	172 40	4	25	29
2	56 33	172 32	4	41	45
8	56 18	175 10	....	2	2
			113	333	446
9	56 50	174 22	....	5	5
15	54 20	169 35	....	1	1
Total	....	....	113	339	452

AMERICAN SCHOONER HERMAN (JAPAN COAST AND BERING SEA), SCOTT, MASTER.

Date.	Latitude.	Longitude.	Males.	Females.	Total.
1895.	N.	E.			
Mar. 20	[a]36 47	145 26	....	....	1
21	36 45	145 40	....	....	4
27	36 40	145 05	....	....	1
Apr. 1	36 44	146 20	....	....	40
2	36 39	146 06	....	....	26
3	[b]36 44	145 50	....	....	2
5	[b]36 40	146 24	....	....	4
11	[b]38 38	146 17	....	....	1
12	39 02	146 14	....	....	7
13	38 48	146 32	....	....	13
15	38 06	146 35	....	....	9
16	37 30	146 28	....	....	21
18	37 28	146 52	....	....	5
19	37 30	146 35	....	....	7
23	39 27	143 02	....	....	1
25	39 25	142 51	....	....	5
26	39 22	142 45	....	....	4
27	39 23	142 25	....	....	5
28	39 31	142 21	....	....	66
29	39 27	142 40	....	....	3
30	39 36	142 30	....	....	11
May 1	39 26	142 31	....	....	17
3	40 22	142 28	....	....	7
4	40 31	142 16	....	....	38
5	40 38	142 31	....	....	9
6	40 59	141 56	....	....	19
7	40 54	141 47	....	....	23
8	41 12	142 00	....	....	2
9	Cruising from 20 to 40 miles E. off Cape Yesan.		....	....	5
10	Cape Yesan W. about 20 miles.		....	....	11
12	41 53	142 18	....	....	10
13	42 13	141 26	....	....	10
14	41 48	142 25	....	....	32
15	42 07	142 40	....	....	18
16	41 51	142 31	....	....	1

[a] Observation.

[b] Dead reckoning.

Positions where fur seals were taken in the North Pacific Ocean and Bering Sea in 1895—Continued.

AMERICAN SCHOONER HERMAN (JAPAN COAST AND BERING SEA), SCOTT, MASTER—Continued.

Date.	Latitude.	Longitude.	Males.	Females.	Total.
1895.	N.	E.			
May 17	Cape Yerimo N. 20 miles.				1
20	41 49	142 27			29
23	41 58	142 07			19
24	41 50	142 20			29
25	Cape Yerimo ENE. ½ E.				13
26	Distance 30 miles.				9
June 1	Shotan NW. 15 miles.				2
2	Shotan NNE. 10 miles.				14
7	W. end of Yetorufie Island NW. 25 miles.				16
8	do				8
10	S. side west end W. 25 miles.				23
12	10 miles S. of Jap Bay, Yetorufie.				1
13	44 57	147 51			13
14	W. end Yetorufie Island NW. 25 miles.				2
15	W. end Yetorufie Island NNW. 35 miles.				7
16	Otter Island N. 6 miles, S. of Yetorufie.				1
17	Otter Island N. 10 miles.				5
18	W. end of Yetorufie NNW. 12 miles.				6
23	45 19	149 27			1
	N.	W.			
Aug. 1	56 07	167 15		10	10
2	56 10	166 25	4	10	14
10	55 45	164 51		1	1
12	56 19	165 10		4	4
14	55 19	168 11		1	1
15	55 08	168 47	6	14	20
17	56 45	172 43	1	11	12
18	56 37	173 43		4	4
19	57 18	173 29	1	5	6
20	57 18	173 30		11	11
21	56 27	173 43		2	2
22	55 55	173 21	8	28	36
23	56 03	173 21	7	14	21
25	55 56	173 23	9	19	28
26	55 54	173 45	14	17	31
27	56 02	173 35	16	53	69
28	56 12	173 32	1	9	10
31	56 56	172 50	5	8	13
Sept. 1	55 56	172 35	22	60	82
2	55 49	172 55	4	12	16
8	56 42	173 41	1	3	4
9	56 16	173 37	3	31	34
13	57 44	172 39	1		1
Total			103	327	1,067

AMERICAN SCHOONER EDWARD E. WEBSTER (JAPAN COAST AND BERING SEA), A. C. FOLGER, MASTER.

1895.	N.	E.			
Mar. 20	[a] 37 22	141 55			15
21	37 34	142 04			100
22	37 17	141 45			14
24	37 38	143 02			1
Apr. 3	38 46	145 00			10
4	39 06	143 53			11
8	39 10	142 31			21
10	39 08	142 20			12
11	38 53	142 26			21

[a] Observation.

Positions where fur seals were taken in the North Pacific Ocean and Bering Sea in 1895—Continued.

AMERICAN SCHOONER EDWARD E. WEBSTER (JAPAN COAST AND BERING SEA), A. C. FOLGER, MASTER—Continued.

Date.	Latitude.	Longitude.	Males.	Females.	Total.
1895.	N.	E.			
Apr. 14	38 50	142 30			3
19	39 48	142 32			35
20	39 47	142 39			3
22	39 37	143 26			2
23	39 24	(a)			5
27	39 49	142 32			36
28	39 50	142 17			44
30	39 45	142 24			4
May 2	41 26	143 02			10
3	41 50	142 53			3
4	41 53	142 02			15
5	42 18	141 24			8
6	41 14	141 20			34
7	42 11	141 18			34
8	42 20	141 16			6
10	42 16	141 05			10
12	42 27	(a)			12
13	42 09	141 00			8
14	(a)	(a)			23
15	41 47	143 05			28
23	43 04	146 55			13
24	43 18	146 51			18
25	43 24	146 24			41
26	43 26	146 23			4
31	43 26	146 23			4
June 1	43 28	146 50			3
2	43 50	147 02			9
6	44 10	147 10			27
7	(a)	(a)			29
8	(a)	(a)			18
10	(a)	(a)			25
13	44 20	147 30			9
14	(a)	(a)			9
15	(a)	(a)			15
18	44 12	147 15			9
19	(a)	(a)			5
	N.	W.			
Aug. 9	[b]55 10	171 35		3	3
10	55 30	171 30	2	13	15
11	[c]54 56	171 40	6	21	27
12	[c]55 13	171 15	3	17	20
15	[c]56 01	171 45	3	22	25
17	[c]55 08	171 01	9	15	24
18	[c]55 08	170 30	1	2	6
20	[c]55 25	169 10	13	50	63
21	[c]55 27	169 36	12	24	33
22	[c]55 16	169 59	4	16	20
24	[c]54 56	168 00	2	4	6
26	[c]54 57	168 55	2	6	8
27	[c]54 54	168 55	3	6	9
28	[c]55 54	168 56	2	2	4
Sept. 1	[c]54 50	168 00	3	4	7
8	[c]47 47	165 18	1		1
Total			66	205	1,037

[a] Not noted on log. [b] Dead reckoning. [c] Observation.

AMERICAN SCHOONER ALTON (JAPAN COAST AND BERING SEA), A. J. ANDERSON, MASTER.

1895.	N.	E.			
Mar. 26	36 40	141 23			6
27	37 07	141 54			1
29	37 50	144 00			1
30	38 59	144 00			3
Apr. 2	38 55	144 57			14
7	41 40	143 28			1
10	41 18	141 52			1
11	40 14	142 51			20

Positions where fur seals were taken in the North Pacific Ocean and Bering Sea in 1895—Continued.

AMERICAN SCHOONER ALTON (JAPAN COAST AND BERING SEA), A. J. ANDERSON, MASTER—Continued.

Date.	Latitude.	Longitude.	Males.	Females.	Total.
1885.	N.	E.			
Apr. 12	39 53	143 07			40
15	39 33	142 45			5
17	39 55	143 5			1
18	39 42	143 40			31
19	39 56	144 00			16
20	39 34	143 00			12
22	39 47	143 05			19
May 1	39 06	143 00			3
3	40 14	142 49			6
4	40 24	142 52			56
5	40 13	142 48			20
6	40 30	142 17			9
7	40 89	142 50			6
9	41 50	142 15			4
10	41 33	143 00			16
15	42 13	145 41			3
16	42 26	144 00			1
19	40 14	142 49			1
20	40 22	142 56			3
June 10	41 30	142 16			4
11	41 36	142 51			3
15	43 00	145 40			2
18	42 03	147 04			3
28	42 47	166 00			1
July 2	43 58	174 16			1
6	23 01	178 48			1
7	42 40	179 10			1
Aug. 3	55 01	178 44	1		1
		W.			
10	55 15	167 40		1	1
11	55 04	167 36		1	1
12	55 07	167 46		1	1
14	55 32	169 03		2	2
15	55 11	169 40	5	6	11
17	55 23	169 47	3	15	18
18	55 22	170 24		1	1
20	55 31	170 43	3	9	12
21	55 13	171 14	4	9	13
22	55 24	170 55	5	10	15
24	55 25	170 46	1		1
26	55 07	169 26	6	7	13
27	55 01	169 15	7	14	21
28	54 55	169 00	1	1	2
31	55 16	169 38	1	3	4
Sept. 1	55 20	169 37	6	16	22
2	55 21	170 00	2	2	4
Total			45	98	458

AMERICAN SCHOONER MATTIE T. DYER (JAPAN COAST), C. E. MOCKLER, MASTER.

Date.	Latitude.	Longitude.	Seals.	Date.	Latitude.	Longitude.	Seals.
1895.	N.	E.		1895.	N.	E.	
Aug. 7	54 00	166 00	12	Aug. 27	54 34	164 40	48
8	53 40	166 04	10	30	54 20	163 30	7
9	53 38	166 14	1	31	54 30	163 40	14
10	55 12	164 10	2	Sept. 2	55 45	(*b*)	1
16	53 43	170 10	1	3	55 45	163 50	3
17	(*a*)	(*a*)	4	4	54 38	163 20	13
20	53 28	165 47	8	8	(*a*)	(*a*)	2
21	54 18	165 47	5	9	54 38	162 30	1
23	54 20	165 10	12				
24	54 37	164 10	1	Total			149
26	54 16	164 10	4				

a No observation.

b No longitude.

Positions where fur seals were taken in the North Pacific Ocean and Bering Sea in 1895—Continued.

AMERICAN SCHOONER EMMA AND LOUISA (BERING SEA), A. McLEAN, MASTER.

Date.	Latitude.	Longitude.	Males.	Females.	Date.	Latitude.	Longitude.	Males.	Females.
1895.	N.	W.			1895.	N.	W.		
Aug. 8	55 08	171 14		3	Aug. 25	55 47	173 00	2	8
10	55 48	171 48		7	26	55 44	173 15	18	35
11	56 30	172 18	3	16	27	55 50	173 15	22	29
12	56 12	172 55	4	29	28	55 59	173 10	14	9
14	56 20	173 01	1	4	Sept. 1	57 27	172 56	2	3
15	56 07	173 00	3	20	2	57 00	172 48	2	28
16	56 15	173 20		1	3	57 00	173 00		11
17	56 17	173 30	2	22	8	56 50	174 03	2	8
18	56 06	173 37	1	12	9	57 21	173 00		3
19	56 02	173 12	3	21	10	57 12	173 07	2	13
20	56 12	172 48	9	40	13	56 59	173 03	2	2
21	56 00	173 04	1	19	18	54 09	167 15	5	4
22	56 06	173 16	6	33					
23	56 10	173 30	4	19	Total.			108	399

AMERICAN SCHOONER BONANZA (JAPAN COAST), GEORGE WESTER, MASTER.

Date.	Latitude.	Longitude.	Males.	Females.	Total.
1895.	N.	E.			
Mar. 30	[a]39 27	146 22			11
Apr. 2	38 33	144 20			5
3	39 26	142 40			7
5	[b]39 29	142 07			5
13	[a]37 26	145 01			27
16	37 15	145 44			26
18	36 41	145 08			16
19	36 20	145 01			13
23	[b]39 48	142 40			6
25	[a]39 28	142 37			10
26	39 28	142 38			2
27	39 48	142 48			41
28	39 48	142 14			56
30	[b]39 36	142 16			1
May 1	[a]39 16	142 21			38
3	40 56	142 08			23
4	41 07	142 16			124
5	41 07	141 58			41
6	41 21	141 58			61
7	41 42	142 10			42
8	41 34	141 54			9
9	[b]41 31	141 36			5
10					26
12	[a]42 07	142 02			19
13	42 03	141 59			63
14	41 52	142 08			40
15	41 49	142 27			26
17					9
23	[a]42 33	145 53			11
24	42 42	145 47			19
25	42 42	145 46			57
26	42 48	145 34			2
27	42 58	145 30			2
28	42 58	145 59			1
30	42 32	146 35			3
31	43 11	147 30			5
June 2	43 05	146 32			8
5	43 38	146 58			2
6	43 31	146 50			13
7	[b]43 43	147 04			10
8					1
10	[a]43 23	146 42			3
14	[b]43 50	147 10			9
16					2
17	[b]43 43	146 52			9
18	[a]44 01	147 51			17
Aug. 9	57 20	172 54		3	3
10	57 40	172 47	2	2	4
12	[b]57 38	172 47	1	2	3
14	[a]55 18	170 40	2	6	8
15	55 26	170 13	4	48	52
17	55 17	170 32	17	38	55
20	55 06	169 47	1	10	11

[a] Observation. [b] Dead reckoning.

Positions where fur seals were taken in the North Pacific Ocean and Bering Sea in 1895—Continued.

AMERICAN SCHOONER BONANZA (JAPAN COAST), GEORGE WESTER, MASTER—Cont'd.

Date.	Latitude.	Longitude.	Males.	Females.	Total.
1895.	N.	E.			
Aug. 21	54 55	170 30	5	5	10
22	*a* 55 06	169 50	2	17	19
27	*b* 54 32	168 03	3	2	5
28	54 44	167 54	7	1	8
29	55 20	170 30		1	1
31	55 15	169 23	6	12	18
Sept. 1	55 15	169 24	33	34	67
2	55 14	169 41	6	6	12
7	55 28	171 31	1	1	2
8	55 34	171 51	2	4	6
9	54 46	171 07		1	1
10	55 05	170 50		3	3
11	*a* 55 00	169 50	1		1
Total			93	196	1,215

a Dead reckoning. *b* Observation.

AMERICAN SCHOONER BOWHEAD (JAPAN COAST), W. P. NOYES, MASTER.

1895.	N.	W.			
Jan. 14	36 14	123 44		18	18
		E.			
Mar. 25	36 48	146 01	1	9	10
27	36 40	145 50	3	11	14
30	36 42	145 10		2	2
Apr. 1	36 21	145 48	3	24	27
2	36 20	146 01	10	46	56
3	36 20	145 43	6	17	23
5	36 37	146 00	2	6	8
6	36 05	145 36	4	12	16
9	37 11	146 28	1	1	2
12	37 01	146 09	1		1
13	37 12	146 08	8	27	35
15	37 17	146 31	7	23	30
16	39 09	146 40	8	7	15
17	39 26	146 34	1	1	2
18	39 40	147 17	5	7	12
19	39 38	147 22	11	14	25
20	39 50	147 25	1	3	4
21	39 57	148 08		1	1
22	39 40	148 40	3	3	6
23	40 12	148 30	16	22	38
26	40 10	148 35	3	5	8
28	39 58	148 30	8	14	22
May 1	39 48	148 02	42	54	96
4	40 00	148 15	2	2	4
5	40 20	148 18	10	14	24
6	40 10	148 12	17	26	43
7	40 12	148 12	8	4	12
8	40 01	148 34	11	10	21
9	40 08	147 53	7		7
11	40 18	148 30	2		2
13	40 39	148 40	2	1	3
16	40 26	146 48	3	1	4
20	41 00	146 44	1		1
24	42 16	145 50	5	2	7
25	42 45	145 36	8	14	22
26	42 50	145 50		1	1
27	42 53	145 30	1		1
30	42 28	145 50	3	1	4
31	42 45	145 35	4	2	6
June 2	43 10	145 55	9	1	10
5	43 15	146 22	5	6	11
6	42 56	146 06	2	2	4
7	43 00	146 05	1		1
15	43 35	147 10	1	1	2
17	43 37	147 15		1	1
18	43 56	147 58	16	5	21
July 6	43 53	173 25	1		1
Total			263	421	684

Positions where fur seals were taken in the North Pacific Ocean and Bering Sea in 1895—Continued.

AMERICAN SCHOONER WINCHESTER (JAPAN COAST), FRANK JOHNSON, MASTER.

Date.	Latitude.	Longitude.	Seals.	Date.	Latitude.	Longitude.	Seals.
1894.	N.	W.		1895—Continued.	N.	E.	
Dec. 13	36 59	123 55	8	May 9	39 39	146 20	14
14	37 06	123 30	8	10	39 37	146 49	50
16	37 15	123 43	9	12	39 32	146 13	32
18	38 00	123 37	16	13	40 00	147 08	11
19	38 00	123 20	7	14	39 54	147 13	3
22	38 24	123 49	11	15	39 53	147 41	6
23	38 33	123 50	47	16	40 12	146 30	4
24	38 31	124 10	11	20	40 44	147 19	5
29	37 55	123 32	9	25	42 29	147 21	20
30	38 08	123 13	4	30	40 09	146 45	4
31	38 15	123 50	8	June 1	43 15	147 00	1
				2	43 20	147 26	11
1895.				5	42 59	147 40	3
Jan. 1	38 03	123 24	1	6	43 33	147 49	5
5	37 45	123 31	3	7	43 43	147 27	10
6	37 36	123 21	27	8	43 57	147 07	6
9	37 34	122 51	1	9	43 47	147 16	1
10	36 53	123 53	45	10	43 40	147 03	4
11	36 43	123 46	17	13	43 30	148 19	16
		E.		14	43 37	148 14	14
Mar. 21	36 22	144 30	52	15	43 29	147 51	9
24	36 14	147 00	9	17	43 29	147 12	10
27	36 21	145 06	16	18	43 40	147 40	5
30	36 15	145 33	1	19	43 30	148 16	6
Apr. 1	36 30	146 10	33	30	49 30	158 52	3
2	36 39	146 02	25	July 5	52 37	165 38	2
3	36 25	145 49	38	7	52 58	166 52	1
5	36 25	145 49	16	14	53 40	168 33	4
6	36 26	146 25	7	16	53 48	168 10	29
15	39 38	142 29	18	21	53 09	168 22	11
16	39 15	142 46	18	22	53 45	168 16	4
17	40 04	142 56	4	25	53 51	168 36	2
18	40 06	143 00	13	28	53 24	167 36	8
19	39 55	143 25	44	29	53 27	168 07	10
23	40 37	143 42	8	30	53 25	168 32	11
26	42 22	145 02	1	31	53 58	168 28	1
27	42 37	144 40	2	Aug. 1	53 27	168 56	9
May 4	42 25	144 30	9	2	53 30	168 20	9
5	42 00	145 24	1	5	53 16	168 50	1
6	41 11	146 10	13				
8	39 46	143 52	8	Total			923

AMERICAN SCHOONER SOPHIA SUTHERLAND (JAPAN COAST), A. C. SUTHERLAND, MASTER.

1895.	N.	E.		1895.	N.	E.	
Mar. 9	36 16	144 36	1	Apr. 30	40 41	142 21	17
13	36 53	141 46	3	May 8	41 21	142 31	15
21	36 26	144 45	54	9	41 05	142 20	45
24	38 13	142 27	12	10	41 13	141 47	21
30	39 27	143 28	6	12	40 54	142 19	3
Apr. 2	38 01	145 53	21	13	41 31	143 08	11
6	38 05	143 51	1	16	41 22	145 38	2
7	38 37	142 53	2	17	40 06	150 14	1
8	39 42	142 49	3	19	42 02	152 23	1
11	38 01	145 43	7	25	41 52	174 58	1
12	37 33	145 05	13	26	42 30	178 21	2
13	37 27	145 29	11			W.	
15	37 50	145 03	1	June 1	40 42	177 47	4
16	38 47	145 50	3	11	40 31	150 21	1
18	39 15	145 01	1	13	40 46	148 15	....
19	38 44	145 37	6	14	(*a*)	(*a*)	6
22	39 20	144 56	1	15	40 55	147 46	3
23	39 56	145 31	28				
27	39 42	145 37	2	Total			309

a Calm. No observation.

Positions where fur seals were taken in the North Pacific Ocean and Bering Sea in 1895—Continued.

AMERICAN SCHOONER RATTLER (JAPAN COAST AND BERING SEA), FREDERICK NIELSEN, MASTER.

Date.	Latitude.	Longitude.	Males.	Females.	Total.
1895.	N.	E.			
Apr. 11	39 22	142 41	10	12	22
12	39 18	142 32	21	17	38
13	39 45	142 45	2	1	3
15	39 54	142 35	7	2	9
16	40 59	142 01	....	2	2
18	40 13	143 55	1	....	1
19	39 41	144 16	19	39	58
23	39 35	144 48	....	4	4
28	39 08	145 11	....	2	2
May 1	39 42	144 55	4	21	25
3	40 58	143 11	2	5	7
4	40 41	142 58	11	36	47
5	40 40	142 35	3	7	10
7	41 01	142 47	4	4	8
9	42 08	142 16	8	2	10
10	42 07	142 08	12	3	15
12	41 55	142 17	5	....	5
13	41 42	142 38	11	17	28
14	41 40	142 43	3	4	7
15	41 23	143 32	3	....	3
16	41 55	143 47	1	....	1
24	41 52	144 42	3	1	4
25	41 40	144 00	2	....	2
26	41 38	142 25	11	17	28
27	41 38	142 25	4	2	6
June 1	42 08	142 10	4	1	5
2	42 08	142 10	1	7	8
4	42 10	142 00	2	7	9
5	41 33	143 24	2	....	2
6	42 11	144 38	5	11	16
7	42 39	145 32	3	8	11
8	43 06	146 11	....	1	1
10	43 10	147 16	....	2	2
11	43 10	147 16	1	....	1
15	43 10	147 16	1	4	5
18	44 06	148 14	2	....	2
29	41 42	175 56	29	12	41
30	42 03	176 21	....	3	3
July 6	43 15	176 00	21	71	92
7	43 09	175 58	7	24	31
8	43 34	175 55	....	2	2
		W.			
Aug. 1	54 57	167 45	10	21	31
2	54 52	167 32	3	7	10
4	55 09	169 37	3	7	10
8	54 59	169 12	....	1	1
9	55 05	169 10	3	4	7
10	55 03	169 22	12	48	60
11	55 00	169 20	15	57	72
12	54 49	169 10	6	7	13
14	55 04	169 30	6	28	34
15	54 55	169 24	3	9	12
17	55 13	170 38	6	28	34
18	55 11	170 36	1	1	2
20	54 44	168 51	6	6	12
21	54 51	169 31	....	1	1
22	55 05	170 38	6	24	30
24	56 49	174 49	....	1	1
25	57 09	173 43	7	44	51
26	56 55	173 51	7	29	36
27	57 03	173 50	1	1	2
28	57 22	173 48	....	13	13
Sept. 1	58 36	173 32	....	2	2
2	57 35	173 54	3	16	19
6	56 41	174 52	1	1	2
8	56 54	173 47	2	5	7
9	56 43	174 33	....	2	2
10	56 42	173 30	....	1	1
15	54 38	166 48	....	1	1
18	54 42	166 22	....	5	5
20	54 30	165 35	1	....	1
Total	....	....	327	721	1,048

Positions where fur seals were taken in the North Pacific Ocean and Bering Sea in 1895—Continued.

AMERICAN SCHOONER JANE GRAY (COAST OF JAPAN AND RUSSIA), S. H. BURTIS, MASTER.

Date.	Latitude.	Longitude.	Seals.
1895.	N.	E.	
Mar. 24	35 58	141 08	2
25	37 12	141 18	31
26	37 06	141 20	2
27	37 30	141 37	12
29	38 06	141 55	21
30	38 08	142 22	9
Apr. 2	37 40	143 20	23
3	38 07	142 30	11
5	38 29	142 20	6
9	39 31	142 25	9
12	37 40	142 21	2
15	40 19	143 13	14
16	40 27	142 15	30
17	40 28	142 05	7
18	40 15	142 16	10
19	40 11	142 25	75
20	40 09	142 24	11
22	40 50	143 00	71
23	40 00	143 00	30
25	39 37	142 22	5
27	39 58	142 30	58
28	40 09	142 12	19
30	40 50	142 15	4
May 1	41 54	142 00	6
2	41 54	142 00	32
3	41 54	142 00	33
4	41 54	142 00	89
5	41 54	142 00	32
6	41 54	142 00	94
7	41 54	142 00	55
9	41 54	142 00	1
10	41 54	142 00	16
13	41 54	142 00	14
14	41 30	142 10	24
15	41 25	142 15	51
16	41 25	142 15	8
20	41 55	142 40	26
21	41 40	142 40	4
23	41 35	142 15	19
24	41 25	142 15	23
25	41 45	142 45	14
May 26	41 42	142 49	19
27	41 36	142 46	2
June 1	41 06	143 20	2
2	41 06	143 20	1
3	41 06	143 20	4
5	42 30	146 24	1
6	42 44	146 20	10
7	42 55	146 16	12
13	43 47	148 35	10
14	44 00	147 10	10
15	44 15	146 10	5
17	44 10	146 55	10
18	44 18	147 03	7
19	44 12	147 28	4
23	44 10	147 40	6
24	43 21	148 00	5
Total	....	....	*a* 1,111
Aug. 5	52 52	164 11	1
7	53 52	165 48	42
8	53 59	165 49	2
9	54 17	165 02	1
10	55 09	163 44	3
16	56 44	164 25	28
17	56 09	164 10	8
18	56 09	164 10	2
19	56 09	164 10	1
20	56 09	164 10	13
21	56 09	164 10	13
22	53 45	164 00	5
26	54 20	165 29	1
27	54 12	165 37	26
28	54 01	165 39	2
31	54 10	165 35	4
Sept. 2	54 10	165 35	16
3	54 10	165 35	5
4	54 10	165 35	12
Total	....	....	185

a June 19, one skin taken in trade, making 1,112 skins in all landed at Yokohama, Japan.

AMERICAN SCHOONER THERESE (BERING SEA), JOHN WORTH, MASTER.

Date.	Latitude.	Longitude.	Males.	Females.	Total.
1895.	N.	W.			
Aug. 10	56 46	168 41	8	22	30
11	*a* 54 58	168 50	3	8	11
12	54 36	168 32	....	2	2
14	55 11	168 35	....	1	1
15	54 48	168 23	4	11	15
17	56 00	172 00	2	19	21
18	55 58	172 10	3	11	14
19	*a* 56 00	172 12	11	17	28
			b 31	*b* 91	*b* 122
20	56 22	172 45	11	45	56
21	56 28	172 45	8	12	20
22	*a* 56 25	172 10	4	23	27
23	*a* 56 30	172 00	2	9	11
25	56 32	172 12	5	34	39
26	56 17	173 48	5	15	20
27	56 39	173 30	18	53	71
28	56 48	173 30	5	10	15
Sept. 1	57 11	172 48	....	3	3
2	56 32	172 48	1	18	19
6	56 25	174 20	1	....	1
8	56 43	172 28	4	8	12
9	57 04	173 34	1	9	10
Total	....	....	96	330	426

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a Dead reckoning.

b August 20, latitude 56° 22′ north, longitude 173° 14′ west, the above number of skins and sex found to be correct by E. V. D. Johnson, lieutenant, United States revenue steamer *Perry*.

Positions where fur seals were taken in the North Pacific Ocean and Bering Sea in 1895—Continued.

AMERICAN SCHOONER COLUMBIA (NORTHWEST COAST), CHESTOQUA PETERSON, MASTER.

Date.	Latitude.	Longitude.	Males.	Females.	Total.
1895.	N.	W.			
Jan. 24	48 07	126 00	10	5	15
25	48 10	126 01	16	15	31
26	48 06	126 00	12	3	15
27	48 12	125 58	18	9	27
28	48 15	126 03	12	4	16
29	48 00	125 58	9	7	16
Feb. 7	48 07	126 00	24	10	34
8	48 08	125 58	3	3	6
9	48 12	125 59	8	7	15
Mar. 4	48 10	125 20	3	5	8
5	48 15	125 30	1	6	7
6	48 40	125 00	2	6	8
7	47 42	125 05	4	2	6
8	48 00	125 02	2	....	2
21	47 48	125 21	11	39	50
23	47 46	125 25	....	3	3
24	47 39	125 25	....	2	2
25	47 33	125 20	1	....	1
26	47 44	125 50	12	20	32
27	47 43	125 45	2	15	17
28	47 52	125 08	2	2	4
29	47 44	125 07	13	41	54
Total	....	....	165	204	*a* 369

a Shot 40, speared 329.

Customs examination, 216 females and 153 males.

AMERICAN SCHOONER COLUMBIA (NORTHWEST COAST), O. F. CHRISTIANSON, MASTER.

1895.	N.	W.			
Aug. 1	54 34	166 55	26	35	61
2	54 35	167 07	12	8	20
3	55 07	166 39	....	1	1
4	55 05	166 27	....	11	11
5	54 53	166 46	3	4	7
8	54 42	166 58	1	1	2
10	54 43	166 55	18	27	45
11	54 43	166 55	16	37	53
12	54 35	166 14	3	4	7
15	55 27	167 10	6	57	63
17	55 20	167 18	....	2	2
19	55 02	167 28	1	3	4
20	54 56	167 28	14	41	55
21	54 59	167 28	9	10	19
24	55 07	167 03	12	18	30
26	54 22	167 33	5	9	14
27	54 15	167 33	6	8	14
28	54 35	167 16	2	4	6
31	55 41	167 10	....	1	1
Sept. 1	55 35	167 08	4	32	36
2	55 28	166 50	2	2	4
3	54 30	166 43	....	1	1
7	55 02	166 27	4	14	18
8	55 12	166 37	2	14	16
9	54 47	166 38	2	3	5
10	54 35	166 31	11	22	33
11	54 51	166 40	2	2	4
16	54 35	166 24	1	8	9
18	54 19	166 14	1	2	3
Total	....	....	163	381	544

Positions where fur seals were taken in the North Pacific Ocean and Bering Sea in 1895—Continued.

AMERICAN SCHOONER JAS. G. SWAN (NORTHWEST COAST), PETER BROWN, MASTER.

Date.	Latitude.	Longitude.	Males.	Females.	Total.
1895.	N.	W.			
Feb. 2	48 00	126 00	9	6	15
3	48 07	125 58	22	12	34
7	48 12	126 03	3	4	7
8	48 09	126 05	10	17	27
Mar. 5	48 05	125 15	3	2	5
6	47 50	125 20	....	1	1
7	47 40	125 19	3	5	8
8	47 45	125 21	5	6	11
Apr. 21	47 49	125 23	10	13	23
22	47 50	125 20	....	2	2
24	47 40	125 22	1	1	2
25	47 42	125 23	3	2	5
26	47 50	125 30	14	7	21
27	47 51	125 21	3	5	8
29	47 44	125 05	14	41	55
Total	....	....	100	124	*a* 224

a Shot 30, speared 194.

Customs examination, 156 females and 68 males.

AMERICAN SCHOONER JAS. G. SWAN (BERING SEA), J. W. TODD, MASTER.

1895.	N.	W.			
Aug. 1	54 22	166 59	7	3	10
2	54 38	167 43	3	5	8
3	54 42	167 38	8	7	15
4	54 44	166 55	12	10	22
8	55 24	171 42	....	1	1
9	55 10	171 02	3	8	11
10	55 20	170 11	10	81	91
11	54 52	170 15	9	64	73
12	54 48	170 22	4	5	9
14	55 18	170 30	8	68	76
15	55 18	170 17	7	57	64
17	55 22	170 09	16	73	89
19	55 07	169 53	....	1	1
20	55 30	169 58	16	82	98
21	55 22	170 08	11	55	66
22	55 22	170 06	12	68	80
26	55 08	170 40	8	52	60
27	55 04	170 45	25	55	80
28	55 14	170 40	7	23	30
31	55 22	169 48	3	4	7
Sept. 1	55 24	169 54	31	121	152
2	55 24	170 25	8	13	21
10	55 24	170 20	4	16	20
Total	....	....	212	872	1,084

AMERICAN SCHOONER STELLA ERLAND (NORTHWEST COAST), H. K. NEWGARD, MASTER.

1895.	N.	W.			
Feb. 7	48 16	125 36	3	6	9
8	47 51	125 18	5	1	6
9	48 03	125 29	10	6	16
Mar. 4	47 46	125 10	1	....	1
5	47 46	125 50	4	....	4
6	47 45	125 25	2	1	3
7	47 57	125 02	2	....	2
8	47 45	125 35	7	8	15
9	47 34	125 50	3	....	3
21	48 01	126 00	4	6	10
24	47 47	125 05	....	2	2
25	47 32	125 45	1	2	3
26	47 33	125 30	15	18	33
27	47 45	125 30	7	5	12
28	47 42	125 25	....	1	1
29	48 00	125 14	19	26	45
Total	....	....	83	82	*a* 165

a Shot 2, speared 163.

Customs examination, 130 females and 35 males.

Positions where fur seals were taken in the North Pacific Ocean and Bering Sea in 1895—Continued.

AMERICAN SCHOONER STELLA ERLAND (BERING SEA), B. B. WHITNEY, MASTER.

Date.	Latitude.	Longitude.	Males.	Females.	Total.
1895.	N.	W.			
Aug. 1	54 28	166 19	29	43	72
2	54 32	166 34	1	6	7
3	54 29	166 29	1	2	3
4	54 17	167 55	5		5
5	54 12	168 33	1		1
8	54 03	168 03		1	1
9	54 56	168 03	1	3	4
10	54 56	168 05	13	44	57
11	54 37	167 30	16	47	63
12	54 21	167 11	20	17	37
15	55 04	166 54	5	57	62
17	54 56	167 27	12	19	31
19	55 14	167 32	5	18	23
20	55 10	167 51	9	26	35
21	55 03	168 14	8	12	20
22	55 12	167 26		12	12
23	54 26	166 17	7	16	23
24	54 33	167 17	12	23	35
27	54 38	165 46	8	15	23
28	54 41	165 56	18	47	65
Sept. 2	55 00	168 37	1		1
7	55 13	172 60	3	4	7
9	55 49	172 23	6	28	34
10	55 50	172 15	2	4	6
15	55 05	167 02		3	3
16	55 56	165 34		2	2
20	54 31	165 32	20	24	44
Total			203	473	676

AMERICAN SCHOONER PURITAN (NORTHWEST COAST), IDIS WOODWARD, MASTER.

Date.	Males.	Females.	Total.
Between March 8 and March 25, 1895	2	2	4
Between March 25 and April 30, 1895	2	4	6
Total	4	6	*a* 10

a Speared.

AMERICAN SCHOONER TEASER (NORTHWEST COAST), MAC OLESON, MASTER.

Date.	Latitude.	Longitude.	Males.	Females.	Total.
1895.	N.	W.			
Mar. 5	48 08	125 42	6	8	14
6	47 45	125 18	1	2	3
7	47 10	125 58		2	2
8	47 56	126 18	3	2	5
9	47 56	126 25		1	1
Apr. 8	48 05	126 26	5	4	9
21	47 44	125 12	6	8	14
22	47 49	126 26	4	3	7
26	47 43	125 34	8	6	14
27	47 43	125 24	8	10	18
Total			41	46	*a* 87

a Shot 2, speared 85.

Customs examination, 64 females and 23 males.

Positions where fur seals were taken in the North Pacific Ocean and Bering Sea in 1895—Continued.

AMERICAN SCHOONER AUGUST (NORTHWEST COAST), CHARLES WEIBERHARD, MASTER.

Date.	Males.	Females.	Total.
Between March 8 and March 25, 1895	2	4	a 6

a Speared.

AMERICAN SCHOONER MATILDA (NORTHWEST COAST), JAMES YOKUM, MASTER.

Date.	Latitude.	Longitude.	Males.	Females.	Total.
1895.	N.	W.			
Jan. 29	48 06	125 32	....	4	4
Feb. 9	48 01	125 26	1	....	1
Mar. 5	47 53	125 40	....	1	1
8	47 40	125 54	1	....	1
9	47 42	125 43	1	....	1
Apr. 21	48 00	127 00	1	5	6
22	47 00	135 26	....	1	1
24	47 40	127 43	1	2	3
26	48 00	126 00	8	7	15
27	48 06	125 32	....	2	2
Total	....	....	13	22	a 35

a Shot 3, speared 32.

Customs examination, 30 females and 5 males.

AMERICAN SCHOONER C. C. PERKINS (NORTHWEST COAST), TOKASKO, OR LIGHTHOUSE JIM, MASTER.

Date.	Males.	Females.	Total.
Between February 28 and March 25, 1895	5	17	22
March 25 to April 30, 1895	3	9	12
Total	8	26	a 34

a Speared.

AMERICAN SCHOONER ELSIE (NORTHWEST COAST), N. T. OLLIVER, MASTER.

Date.	Latitude.	Longitude.	Males.	Females.	Total.
1895.	N.	W.			
Feb. 8	48 07	125 28	11	4	15
9	47 50	125 30	26	11	37
13	48 02	125 33	3	....	3
22	48 03	124 50	1	....	1
23	47 51	125 12	2	2	4
24	47 45	125 00	11	5	16
Mar. 3	47 55	125 04	4	4	8
4	48 01	125 05	3	1	4
5	47 53	125 32	2	3	5
6	47 28	124 50	....	2	2
9	47 56	124 55	....	2	2
10	47 50	125 25	1	1	2
31	48 00	125 03	1	....	1
Apr. 4	47 50	125 12	4	11	15
8	47 50	125 12	3	5	8
20	48 02	125 00	4	6	10
21	47 40	125 12	1	26	27
22	47 56	124 52	....	6	6
24	47 50	125 12	1	4	5
26	47 48	125 15	2	11	13
27	47 57	125 12	1	3	4
29	48 20	125 45	3	18	21
Total	....	....	84	125	a 209

a Shot 204, speared 5.

Positions where fur seals were taken in the North Pacific Ocean and Bering Sea in 1895—**Continued.**

AMERICAN SCHOONER BERING SEA (NORTHWEST COAST), L. LARSEN, MASTER.

Date.	Latitude.	Longitude.	Males.	Females.	Total.
1895.	N.	W.			
Mar. 4	48 30	125 19	1	3	4
5	47 28	125 00	3	5	8
6	47 39	125 10		2	2
7	47 50	125 30	1	1	2
9	48 09	127 00	8	19	27
10	48 05	127 10		2	2
Apr. 19	48 46	126 30	4	5	9
20	48 30	126 40	7	11	18
21	48 30	126 30	12	21	33
22	48 20	126 15	1		1
27	48 07	126 30	21	12	33
28	48 10	126 20	2	2	4
29	48 15	126 15	16	21	37
Total			76	104	[a]180

[a] Shot 8, speared 172.

Customs examination, 145 females and 35 males.

AMERICAN SCHOONER BERING SEA (BERING SEA), L. LARSEN, MASTER.

1895.	N.	W.			
Aug. 1	54 35	166 50	18	41	59
2	54 52	166 51	2	18	20
3	54 54	167 10		1	1
4	55 03	166 54		7	7
6	54 55	166 57	1		1
8	54 57	166 03		1	1
9	54 49	167 10	1	3	4
10	54 50	167 23	10	31	41
11	54 40	166 45	32	105	137
12	54 42	166 17		2	2
15	54 34	166 09	17	53	70
20	54 30	166 40	7	16	23
21	54 19	167 04	6	4	10
22	54 40	166 44	4	7	11
23	54 40	166 24		10	10
24	54 48	165 35	6	27	33
26	54 38	167 56	4	6	10
27	54 24	167 15	10	23	33
28	54 18	167 15	4	8	12
31	54 35	166 25	4	12	16
Sept. 1	55 00	166 30	7	19	26
2	55 24	166 24		8	8
3	55 21	167 30		2	2
7	55 05	168 24	9	23	32
8	55 20	169 30	6	19	25
9	55 10	169 46		1	1
10	55 15	169 50	8	20	28
13	54 51	168 08		1	1
15	54 50	167 00	1	15	16
16	54 34	166 30	5	10	15
21	54 25	166 00	3	5	8
Total			165	498	663

AMERICAN SCHOONER DEEAHKS (NORTHWEST COAST), JOHN JAMES, MASTER.

1895.	N.	W.			
Mar. 4	48 00	125 00	5	3	8
5	47 56	125 12	4	8	12
6	47 38	125 05	3	5	8
7	47 24	125 16	4	5	9
8	47 19	125 08	3	6	9
Apr. 21	(a)	(a)	8	10	18
23	(a)	(a)	2		2
	(a)	(a)	10	6	16
Total			39	43	[b]82

[a] No position for these days.

[b] Shot 9, speared 73.

Customs examination, 62 females and 20 males.

Positions where fur seals were taken in the North Pacific Ocean and Bering Sea in 1895—Continued.

AMERICAN SCHOONER DEEAHKS (BERING SEA), BEN MARTINIUS, MASTER.

Date.	Latitude.	Longitude.	Males.	Females.	Total.
1895.	N.	W.			
Aug. 1	54 22	166 58	6	5	11
2	54 18	168 15	4	4	8
4	54 32	167 45	2	3	5
5	54 30	167 51	3	12	15
7	54 50	165 55	....	1	1
8	55 04	166 01	1	....	1
9	54 56	165 55	6	17	23
10	54 48	166 00	11	60	71
11	54 52	166 09	15	46	61
12	54 50	165 45	5	13	18
14	55 20	168 18	8	39	47
15	55 14	168 08	13	49	62
17	55 14	168 28	2	19	21
18	55 15	168 39	1	4	5
20	54 20	167 03	8	35	43
21	54 18	166 49	3	10	13
27	55 02	166 46	2	19	21
28	54 52	166 20	15	33	48
30	54 35	166 40	2	1	3
31	54 28	167 34	6	16	22
Sept. 1	54 25	167 26	10	15	25
2	54 50	167 40	1	8	9
7	55 25	167 10	8	20	28
8	55 30	167 38	6	8	14
9	54 55	167 00	....	3	3
10	55 05	166 52	2	9	11
11	55 25	166 10	....	1	1
15	54 50	165 32	1	1	2
Total	....	....	141	451	592

AMERICAN SCHOONER EMMETT FELITZ (NORTHWEST COAST), JAMES CLAPLANHOZ, MASTER.

Date.	Males.	Females.	Total.	Date.	Males.	Females.	Total.
1895.				1895.			
Mar. 4	3	....	3	Apr. 22	....	1	1
5	....	3	3	25	1	1	2
6	1	5	6	26	1	1	2
7	....	3	3	27	....	7	7
8	....	3	3				
Apr. 21	3	16	19	Total	9	40	*a* 49

a Shot 16, speared 33.

AMERICAN SCHOONER IDLER (NORTHWEST COAST), L. A. LONSDALE, MASTER.

Date.	Latitude.	Longitude.	Males.	Females.	Total.
1895.	N.	W.			
Jan. 28	47 25	125 00	1	1	2
Feb. 6	48 05	125 40	4	4	8
8	47 50	125 10	....	1	1
9	47 50	125 10	....	1	1
10	47 50	125 10	....	2	2
Mar. 5	48 00	125 00	....	1	1
Apr. 9	48 20	125 35	....	3	3
21	48 00	125 50	1	3	4
23	48 00	125 30	....	1	1
26	48 10	125 00	....	9	9
27	48 20	125 00	....	6	6
29	48 20	125 30	....	3	3
Total	....	....	6	35	*a* 41

a Shot.

Positions where fur seals were taken in the North Pacific Ocean and Bering Sea in 1895—Continued.

AMERICAN SCHOONER JESSIE (NORTHWEST COAST).

Date.	Latitude.	Longitude.	Males.	Females.	Total.
1895.	N.	W.			
Apr. 10, 1895	48 09	125 04	2	22	*a* 24

a Shot 2, speared 22.

Customs examination, 24 females; 22 were pregnant when caught.

AMERICAN SCHOONER R. ECRETT (NORTHWEST COAST).

1895.	N.	W.			
Mar. 5	47 50	125 20	5	1	6
6	48 00	125 30	4	3	7
7	48 00	125 30	5		5
8	47 30	125 20	4		8
9	47 45	125 25	4	3	4
10	47 45	125 25	3	4	7
Apr. 14	47 50	125 40	1		7
20	48 20	125 20	7	3	11
21	48 14	125 30	4	2	0
23	47 30	125 30	2	2	6
24	48 31	125 35		2	4
27	47 30	125 30	9	7	12
28	48 25	125 00	4	2	6
29	48 20	125 00	13	5	16
Total			65	34	*a* 99

a Shot 50, speared 49.

Customs examination, 90 females and 9 males.

AMERICAN SCHOONER GEO. W. PRESCOTT (BERING SEA), HENRY McALMOND, MASTER.

1895.	N.	W.			
Aug. 1	54 40	168 10	17	15	32
2	54 30	168 00	16	5	21
10	54 34	166 00	7	5	12
11	54 27	166 30	16	23	39
12	54 24	166 40	4	4	8
15	54 30	166 49	14	6	20
17	54 40	168 25	3	14	17
18	54 45	168 20	2	5	7
19	54 40	168 24		13	13
20	54 50	168 35		15	15
21	55 30	168 01		6	6
22	54 30	168 20	4		4
24	55 17	167 40		1	1
27	54 35	165 25	5	6	11
28	54 34	165 30	10	17	27
30	54 48	165 30		1	1
31	54 45	165 35	37	23	60
Sept. 1	54 40	165 40		8	8
2	54 38	165 45		3	3
3	54 35	165 50		2	2
8	55 00	167 40	4	10	14
9	55 15	167 40		5	5
10	55 15	167 40		1	1
12	55 05	166 15	2		2
Total			141	188	329

Positions where fur seals were taken in the North Pacific Ocean and Bering Sea in 1895—Continued.

AMERICAN SCHOONER ALLIE I. ALGAR (BERING SEA), H. B. JONES, MASTER.

Date.	Latitude.	Longitude.	Males.	Females.	Total.
1895.	N.	W.			
Aug. 4	55 27	166 46	1	7	8
5	55 42	167 07	1	3	4
11	55 36	167 11	4	52	56
12	55 17	167 13	1	....	1
15	55 01	167 24	5	34	39
17	55 40	167 23	....	2	2
20	55 17	166 50	2	27	29
21	55 02	167 20	1	13	14
24	55 44	167 24	....	1	1
25	55 12	168 54	....	1	1
26	55 20	169 13	2	10	12
27	54 56	169 20	2	10	12
28	54 31	169 32	1	6	7
Sept. 3	56 41	167 06	....	7	7
Total	....	....	20	173	193

AMERICAN SCHOONER WILLARD AINSWORTH (BERING SEA), E. E. CROCKETT, MASTER.

1895.	N.	W.			
Aug. 2	54 49	166 30	1	....	1
4	55 10	168 29	6	12	18
9	55 08	168 14	....	2	2
10	55 16	168 25	5	15	20
11	55 10	168 25	12	51	63
12	55 00	167 20	4	19	23
14	55 06	168 40	2	4	6
15	55 20	168 46	15	32	47
17	55 21	168 32	7	36	43
19	55 09	168 35	2	5	7
20	55 18	169 10	18	38	56
21	55 32	168 53	20	38	58
22	55 00	169 57	1	20	21
24	54 57	169 57	7	11	18
27	54 55	168 00	6	9	15
28	54 36	167 30	4	9	13
Sept. 1	55 00	171 35	7	19	26
8	54 39	167 13	....	2	2
9	54 40	166 00	....	1	1
Total	....	....	117	323	440

AMERICAN SCHOONER M. M. MORRILL (BERING SEA), EDWARD CANTILLION, MASTER.

1895.	N.	W.			
Aug. 1	54 27	166 50	10	5	15
4	54 51	169 44	5	15	20
5	55 05	170 20	4	7	11
9	55 16	170 30	....	1	1
10	55 10	170 12	4	30	34
11	55 12	170 25	7	37	44
12	55 12	170 18	4	14	18
14	55 12	169 47	6	10	16
15	54 58	169 25	7	24	31
17	55 20	169 28	5	16	21
20	55 10	169 46	13	46	59
21	55 13	169 47	....	7	7
22	55 07	169 24	4	13	17
24	55 17	169 27	....	1	1
26	54 53	169 45	1	2	3
27	55 00	170 00	11	24	35
28	55 10	170 09	1	6	7
Sept. 1	54 50	167 15	10	6	16
2	54 40	167 20	1	1	2
7	55 18	167 12	2	9	11
8	54 00	167 00	2	11	13
9	54 33	166 50	1	4	5
10	54 27	166 50	4	2	6
Total	....	....	102	291	393

Positions where fur seals were taken in the North Pacific Ocean and Bering Sea in 1895—Continued.

AMERICAN SCHOONER KATE AND ANNA (NORTHWEST COAST), CHARLES LUTZENS, MASTER.

Date.	Latitude.	Longitude.	Males.	Females.	Total.
1895.					
Jan. 15				1	1
25	18 miles SW	Point Reyes		6	6
26	38 00 N	123 36 W		2	2
28	37 09 N	123 10 W		3	3
29	37 04 N	122 55 W		4	4
31	15 miles SW	S. Farallon		4	4
Feb. 1	15 miles SW	Point Reyes		5	5
3	38 17 N	123 33 W		5	5
4	38 16 N	123 25 W		13	13
5	38 14 N	123 15 W	2		2
14			1	15	16
15	38 06	123 24 W		3	3
16	38 00	123 20 W	3	10	13
19	15 miles SW	Point Reyes		5	5
20	22 miles SW	do		8	8
21	20 miles	do		8	8
23	38 42 N	123 50 W		1	1
27	38 25 N	123 45 W		2	2
Mar. 1				5	5
2	20 miles NE. by E	Point Reyes		8	8
3	20 miles NE. by E	do		2	2
4	25 miles ESE	do		7	7
5	20 miles E. by S	do	1	19	20
6	18 miles ESE	do		2	2
7	16 miles E. by S	do	4	14	18
15	37 34 N	123 50 W		2	2
18			8	20	28
22	38 00 N	123 40 W		3	3
23	38 08 N	123 25 W		2	2
24	30 miles ENE	Point Reyes	1	11	12
25	38 16 N	123 47 W		6	6
30	42 00 N	124 25 W		8	8
Apr. 6	44 04 N	124 30 W	1	9	10
7	44 01 N	124 25 W		7	7
18	47 12 N	125 08 W	5	14	19
19	47 20 N	125 05 W	5	24	29
20	47 27 N	125 15 W	1	29	30
21	47 21 N	125 00 W	4	10	14
25	47 25 N	129 05 W		1	1
26	47 27 N	125 25 W	4	11	15
27	47 45 N	125 10 W		5	5
28	47 24 N	124 30 W		3	3
29	18 miles NE. by E	Cape Disappointment	3	30	33
	Total		43	347	*a* 390

a Shot.

Miscellaneous data showing positions where fur seals were taken by Canadian and American vessels in the North Pacific Ocean and Bering Sea in 1895.

[Data collected by C. H. Townsend and A. B. Alexander.]

CANADIAN SCHOONER VICTORIA (NORTHWEST COAST AND BERING SEA).

Date.	Latitude.	Longitude.	Males.	Females.	Total.
1895.	N.	W.			
Mar. 1	48 10	125 30	4	4	8
3	48 00	125 40	4	6	10
4	48 20	125 50	6	8	14
5	47 50	125 10	3	10	13
6	47 45	125 20	2	6	8
7	48 00	126 30	2	8	10
8	48 30	126 30		5	5
16	49 00	127 49		8	8
Apr. 9	58 10	139 00	6	3	9
10			4	1	5
12	58 25	139 40	4		4
16	58 30	140 08	5	3	8
17	58 30	140 08	21	10	31
19	58 44	140 00	1	3	4

Miscellaneous data showing positions where fur seals were taken by Canadian and American vessels in the North Pacific Ocean and Bering Sea in 1895—Continued.

CANADIAN SCHOONER VICTORIA (NORTHWEST COAST AND BERING SEA)—Cont'd.

Date.	Latitude.	Longitude.	Males.	Females.	Total.
1895.	N.	W.			
Apr. 23	58 13	141 40	6	1	7
24	58 13	141 40	4	2	6
25	58 17	142 36	2	....	2
26	58 30	142 44	....	....	1
27	58 30	142 44	4	....	4
28	58 45	143 50	17	12	29
30	58 45	143 50	....	1	1
Aug. 1	54 39	167 12	25	30	55
2	54 21	167 02	11	8	19
3	54 45	166 45	3	2	5
4	54 45	166 48	13	15	28
5	54 57	167 15	7	9	16
8	54 48	167 48	5	8	13
9	55 04	168 15	9	5	14
10	55 05	168 16	81	56	137
11	55 04	168 15	94	172	266
12	55 00	168 28	33	18	51
14	55 15	168 20	21	15	36
15	55 13	168 17	28	22	50
17	55 30	168 25	34	48	82
19	55 22	168 15	5	3	8
20	55 20	167 47	....	15	15

CANADIAN SCHOONER TRIUMPH (NORTHWEST COAST AND BERING SEA), COX, MASTER.

1895.	N.	W.			
Feb. 22	48 10	125 30	1	5	6
23	48 14	125 31	3	6	9
24	48 17	125 18	2	10	12
Mar. 1	48 00	125 20	4	17	21
3	48 00	125 20	2	9	11
5	48 04	125 36	4	10	14
16	50 13	129 47	11	13	24
22	56 07	137 07	6	2	8
24	57 40	138 03	3	....	3
25	57 32	138 24	4	2	6
27	57 37	138 48	2	1	3
28	57 31	138 32	6	3	9
Apr. 3	57 31	137 51	88	30	118
4	57 30	137 56	4	....	4
9	57 24	139 28	4	10	14
10	57 28	138 09	9	7	16
12	57 58	139 08	11	10	21
16	59 10	142 45	3	3	6
19	59 07	142 19	20	9	29
23	58 11	140 05	9	....	9
28	52 27	133 25	6	2	8
Aug. 1	55 08	167 56	70	59	129
2	55 08	167 56	20	18	38
3	55 06	167 46	3	4	7
4	55 02	167 50	24	54	78
5	55 05	167 15	15	13	28
9	55 02	167 33	7	5	12
10	55 00	167 18	24	30	54
11	54 58	167 18	46	80	126
12	55 00	167 21	7	8	15
13	54 54	168 15	1	....	1
14	55 04	168 20	13	9	22
15	55 04	168 40	60	74	134
17	55 20	169 09	99	107	216
18	55 20	169 09	5	4	9
19	55 32	168 13	39	44	83
20	55 24	167 49	24	59	83

Miscellaneous data showing positions where fur seals were taken by Canadian and American vessels in the North Pacific Ocean and Bering Sea in 1895—Continued.

CANADIAN SCHOONER FAVORITE (NORTHWEST COAST), L. McLEAN, MASTER.

Date.	Latitude.	Longitude.	Males.	Females.	Total.
1895.	N.	W.			
Mar. 9	48 00	128 23	4		4
13	49 06	127 39	7	2	9
14	48 42	127 17	3		3
15	48 45	127 23	3	3	6
16	50 03	129 50	15	5	20
22	56 49	138 05	4	2	6
25	57 30	138 30	2		2
26	57 18	138 45	3		3
28	57 53	139 26	5	1	6
Apr. 3	57 45	138 50	20	12	32
8	58 12	140 56	4		4
9	58 15	141 00	8		8
10	58 30	139 40	7		7
11	57 48	140 50	10	2	12
12	57 46	141 30	5		5
18	58 00	141 38	8		8
19	58 15	141 40	4		4
23	58 12	139 41	4		4
24	57 46	138 45	1	1	2
25	57 46	138 00	5		5
Total			122	28	150

CANADIAN SCHOONER SAPPHIRE (NORTHWEST COAST), COX, MASTER.

1895.	N.	W.			
Feb. 23	48 30	125 20	2	4	6
Mar. 1	48 00	125 57	7	5	12
3	47 32	125 56	5	4	9
5	48 16	126 04	11	7	18
16	50 57	131 57	7	6	13
20	55 01	135 19	4	4	8
22	57 22	139 30	5	3	8
24	57 38	138 49	1		1
25	57 48	138 26	13		13
27	57 28	139 38	2		2
28	57 15	139 30	2		2
31	58 30	139 54	2		2
Apr. 3	58 30	141 15	25		25
4	58 38	141 11	14		14
10	58 45	141 30	17		17
11	58 27	141 46	5		5
12	58 58	140 50	13		13
16	59 10	143 18	4		4
17	59 04	143 06	3		3
18	58 24	140 30	4		4
19	58 37	139 36	5		5
24	58 11	139 07	3		3
Total			154	33	187

CANADIAN SCHOONER DORA SIEWERD (NORTHWEST COAST), H. F. SIEWERD, MASTER.

1895.	N.	W.			
Feb. 26	47 47	125 25	16	7	23
20	47 25	125 10	29	13	42
22	48 01	125 00	4	3	7
23	47 56	125 06	6	5	11
24	47 58	125 28	6	3	9
28	47 13	124 24	19	13	32
Mar. 1	47 20	124 50	2	6	8
3	45 55	124 42	14	24	38
6	47 12	124 45	8	4	12
7	47 19	125 08	21	15	36
8	47 28	124 27	1	3	4
9	46 55	124 50	3	5	8
10	46 44	124 56	19	16	35
12	46 37	124 51	17	29	46
13	47 10	125 00	2	4	6
14	46 26	124 51	3	5	8
26	50 07	129 00	29	34	63

Miscellaneous data showing positions where fur seals were taken by Canadian and American vessels in North Pacific Ocean and Bering Sea in 1895—Continued.

CANADIAN SCHOONER DORA SIEWERD (NORTHWEST COAST), H. F. SIEWERD, MASTER—Continued.

Date.	Latitude.	Longitude.	Males.	Females.	Total.
1895.	N.	W.			
Apr. 1	55 27	135 00	2	2	4
3	55 27	135 00	1	1	2
9	58 46	140 00	13	4	17
10	58 35	140 45	10	....	10
12	58 46	139 43	11	4	15
17	58 31	142 15	6	....	6
18	58 00	142 00	9	5	14
19	58 14	141 12	3	....	3
23	58 42	140 20	14	4	18
24	58 43	140 39	4	1	5
25	58 23	140 30	3	2	5
28	56 05	135 39	12	4	16
Total	....	....	287	216	503

CANADIAN SCHOONER WALTER L. RICH (NORTHWEST COAST), BALCOM, MASTER.

1895.	N.	W.			
Mar. 13	48 58	128 35	5	2	7
25	58 08	138 36	12	12	24
28	57 29	138 40	6	2	8
Apr. 1	57 20	140 00	10	9	19
9	58 20	140 00	6	6	12
10	58 24	140 00	8	11	19
19	58 41	140 07	12	10	22
23	59 03	140 50	20	7	27
28	55 35	135 20	4	3	7
Total	....	....	83	62	145

AMERICAN SCHOONER IDA ETTA (COASTS OF JAPAN AND RUSSIA), HUGHES, MASTER.

Date.	Latitude.	Longitude.	Seals.
1895.	N.	E.	
Mar. 25	36 15	142 25	2
30	....	....	7
Apr. 1	36 32	144 47	11
2	....	....	1
3	15 miles off shore.		2
4	....	....	2
5	....	....	6
6	....	....	14
7	39 41	144 11	....
12	39 48	143 56	21
18	40 06	146 07	5
19	....	....	24
22	39 06	146 49	2
23	39 42	146 27	16
28	39 44	145 58	34
May 1	40 30	145 55	37
3	41 45	144 00	1
4	Off Cape Yerimo, NW. 15 miles.		3
5	Off Cape Yerimo, NNE. 10 miles.		17
6	Off Cape Yerimo, N. 20 miles.		32
7	Off Cape Yerimo, WNW. 15 miles.		24
8	Off Cape Yerimo, WNW. 8 miles.		25
9	Off Cape Yerimo, E. by N. 20 miles.		16
10	Off Cape Yerimo, E. 25 miles.		20
May 12	Off Cape Yerimo, ENE. 20 miles.		16
16	40 03	146 02	32
20	39 57	146 25	35
23	40 20	145 44	15
24	40 12	146 30	33
25	39 57	145 55	29
27	40 03	146 19	5
30	39 50	145 55	4
June 2	39 55	145 46	21
3	39 15	146 00	1
5	39 30	146 10	11
6	39 38	146 29	31
7	39 36	146 26	9
Aug. 20	Cape Nagikinski, SW. 30 miles.		37
21	Cape Nagikinski, SW. 20 miles.		35
24	.....do		28
26	.....do		28
27	Cape Nagikinski, W. 30 miles.		10
31	.....do		3
Sept. 1	Cape Nagikinski, WSW. 25 miles.		25
2	Cape Nagikinski, SW. 20 miles.		6
3	Cape Nagikinski, SW. 30 miles.		4
4	Cape Nagikinski, SW. 25 miles.		4

Miscellaneous data showing positions where fur seals were taken by Canadian and American vessels in the North Pacific Ocean and Bering Sea in 1895—Continued.

AMERICAN SCHOONER ALLIE J. ALGAR (JAPAN COAST), JONES, MASTER.

Date.	Latitude.	Longitude.	Males.	Females.	Total.
1895.	N.	E.			
Mar. 7	36 24	141 39	6	5	11
9	37 00	141 00	1	....	1
11	36 39	142 13	50	17	67
12	36 24	141 59	12	4	16
14	36 33	142 18	10	5	15
20	37 00	143 35	8	3	11
21	37 09	143 25	1	3	4
22	37 47	142 14	2	....	2
24	37 22	141 41	20	8	28
26	37 26	142 18	5	7	12
29	38 57	143 35	12	8	20
30	39 14	142 48	14	4	18
Apr. 3	37 35	142 25	5	1	6
5	37 50	141 53	....	1	1
12	38 07	146 32	1	....	1
13	37 59	145 50	18	7	25
15	37 22	145 50	12	7	19
16	37 35	147 07	5	2	7
17	39 05	146 15	1	4	5
18	39 14	146 35	49	19	68
19	39 37	146 23	32	22	54
22	39 35	146 07	31	22	53
23	39 44	145 45	29	15	44
May 4	41 54	144 30	4	2	6
5	41 49	143 55	3	1	4
6	41 28	142 56	39	13	52
7	41 29	142 28	51	11	62
8	41 21	142 00	2	4	6
9	42 00	141 40	2	....	2
10	41 45	142 40	6	3	9
11	41 43	142 48	1	....	1
12	42 00	142 52	5	4	9
13	41 57	142 49	37	15	52
14	42 10	142 40	15	11	26
15	41 39	142 50	19	11	20
23	43 12	146 39	9	3	12
24	42 23	146 40	39	9	48
25	43 27	146 36	37	7	44
26	43 24	146 21	3	1	4
27	43 28	146 40	5	1	6
June 2	43 00	146 59	3	1	4
5	43 37	147 00	1	....	1
6	43 50	147 11	9	5	14
7	43 53	147 14	23	3	26
8	44 00	147 20	6	3	9
10	44 17	147 40	19	17	36
11	44 50	148 47	....	2	2
13	45 14	149 00	4	1	5
15	45 00	148 55	4	3	7
17	44 05	148 40	9	4	13
18	44 40	147 45	20	3	23
30	49 09	157 13	1	....	1
July 1	43 35	156 25	1	....	1
Total	....	....	701	302	1,003

Miscellaneous data showing positions where fur seals were taken by Canadian and American vessels in the North Pacific Ocean and Bering Sea in 1895—Continued.

CANADIAN SCHOONER BOREALIS (NORTHWEST COAST), ROBBINS, MASTER.

Date.	Latitude.	Longitude.	Males.	Females.	Total.
1895.	N.	W.			
Mar. 1	48 10	125 30	4	4	8
3	48 00	125 40	4	6	10
4	48 20	125 40	6	8	14
5	47 50	125 10	3	10	13
6	47 45	125 20	2	6	8
7	48 00	126 30	2	8	10
8	48 30	126 30	....	5	5
16	49 00	127 49	....	8	8
Apr. 9	58 10	139 00	6	3	9
10	....	....	4	1	5
12	58 25	139 40	4	....	4
16	58 30	140 08	5	3	8
17	....	....	21	10	31
19	58 44	140 00	1	3	4
23	58 13	141 40	6	1	7
24	....	....	4	2	6
25	58 17	142 36	2	....	2
26	58 30	142 44	....	....	1
27	....	....	4	....	4
28	58 45	143 50	17	12	29
30	....	....	1	....	1
Total	....	....	96	91	187

CANADIAN SCHOONER BOREALIS (BERING SEA), ROBBINS, MASTER.

[Record to August 9 only.]

1895.	N.	W.			
Aug. 5	56 20	174 35	....	4	4
7	56 35	173 15	....	1	1
9	56 35	173 33	....	2	2

CANADIAN SCHOONER VERA (BERING SEA), SHIELDS, MASTER.

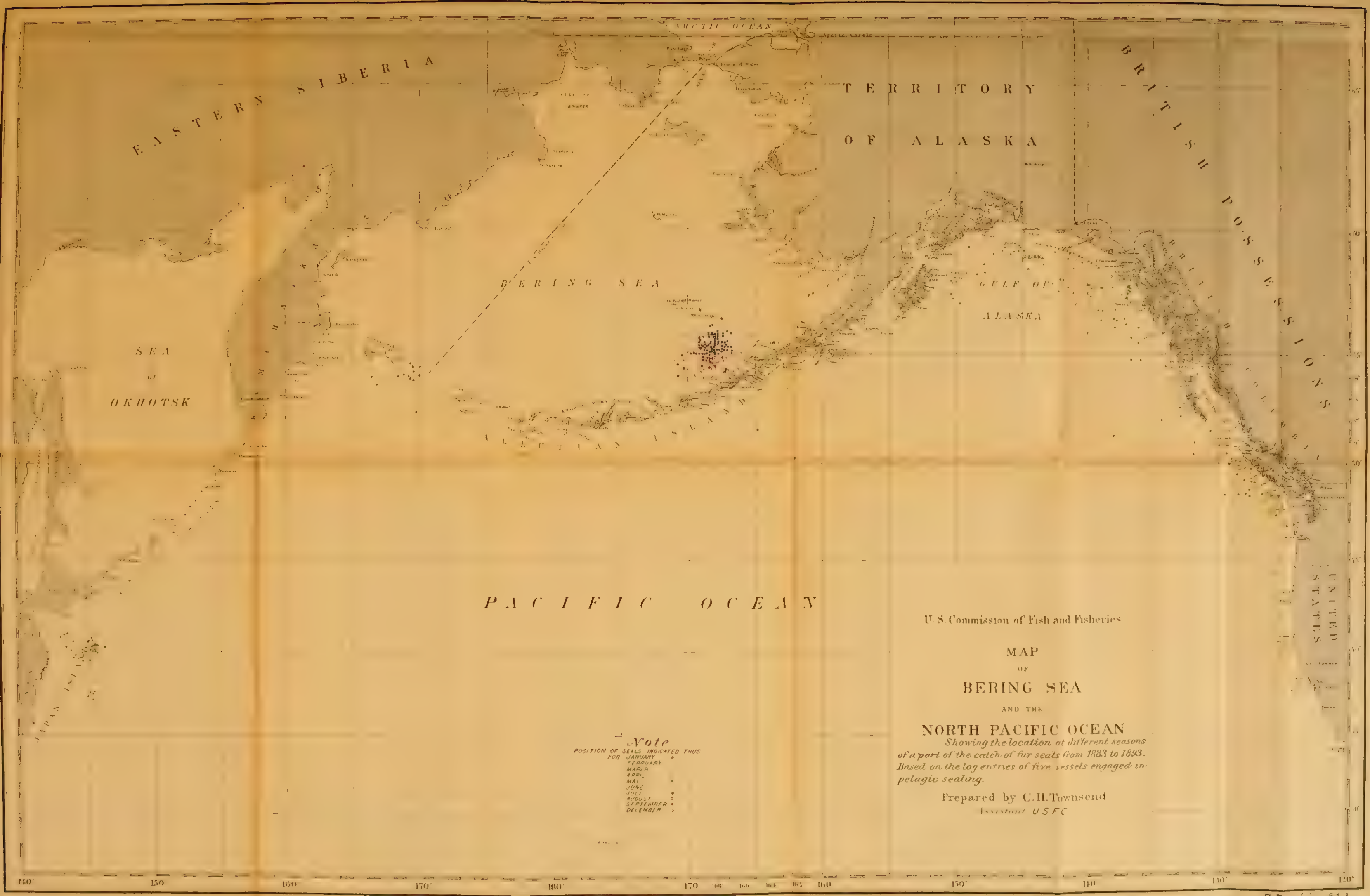
[Record to August 12 only.]

1895.	N.	W.			
Aug. 1	54 18	167 25	1	....	1
2	54 51	169 15	8	24	32
3	54 49	169 10	3	5	8
4	54 45	169 10	5	16	21
7	54 53	168 25	2	....	2
9	54 47	168 18	7	6	13
10	54 54	168 23	14	47	61
11	54 49	168 25	7	13	20
12	54 55	168 52	....	4	4

CANADIAN SCHOONER ENTERPRISE (BERING SEA), DALEY, MASTER.

[Record to August 11 only.]

1895.	N	W.			
Aug. 1	54 34	166 55	13	22	35
2	54 40	166 30	16	14	30
3	55 07	166 35	5	4	9
4	55 00	167 04	9	10	19
9	54 50	168 50	15	19	34
10	54 50	168 30	77	30	107
11	54 50	168 30	54	65	119



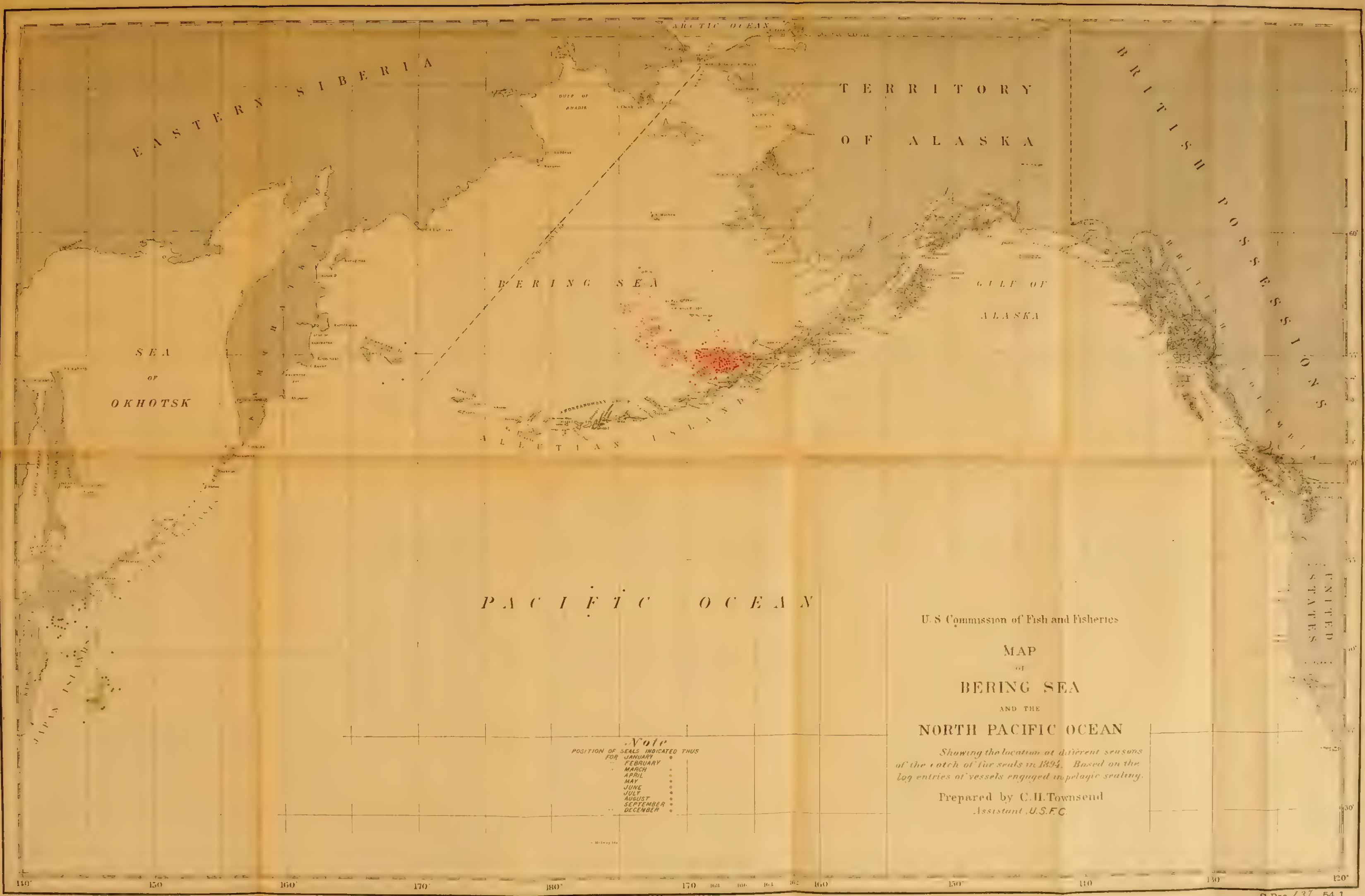
U. S. Commission of Fish and Fisheries

MAP
OF
BERING SEA
AND THE
NORTH PACIFIC OCEAN

Showing the location at different seasons of a part of the catch of fur seals from 1883 to 1893. Based on the log entries of five vessels engaged in pelagic sealing.

Prepared by C. H. Townsend
Assistant U S F C

Base Map prepared by the U. S. Coast & Geodetic Survey



U. S. Commission of Fish and Fisheries

MAP
OF
BERING SEA
AND THE
NORTH PACIFIC OCEAN

Showing the location at different seasons of the catch of fur seals in 1894. Based on the log entries of vessels engaged in pelagic sealing.

Prepared by C. H. Townsend
Assistant, U.S.F.C.

Base Map prepared by the U. S. Coast & Geodetic Survey

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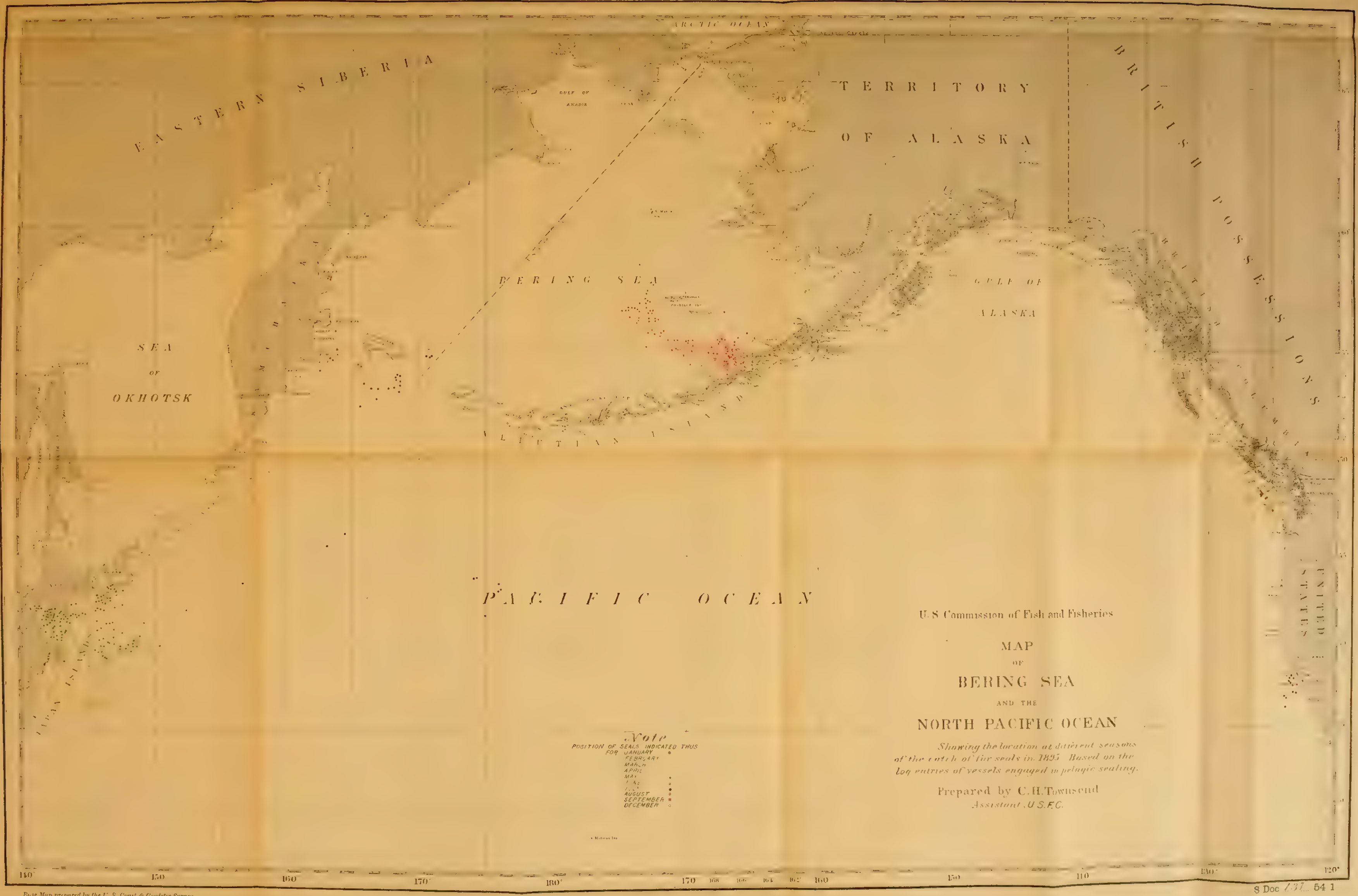

U. S. Commission of Fish and Fisheries

MAP
OF
BERING SEA
AND THE
NORTH PACIFIC OCEAN

Showing the location at different seasons of the catch of fur seals in 1895. Based on the log entries of vessels engaged in pelagic sealing.

Prepared by C. H. Townsend
Assistant, U.S.F.C.

Base Map prepared by the U. S. Coast & Geodetic Survey

Miscellaneous data showing positions where fur seals were taken by Canadian and American vessels in the North Pacific Ocean and Bering Sea in 1895—Continued.

AMERICAN SCHOONER RATTLER (BERING SEA), NEILSEN, MASTER.

Date.	Latitude.	Longitude.	Males.	Females.	Total.
1895.	N.	W.			
Aug. 1	54 57	167 45	10	21	31
2	54 52	167 32	3	7	10
4	55 09	169 37	3	7	10

CANADIAN SCHOONER MAUD S. (BERING SEA), McKIEL, MASTER.

Date.	Latitude.	Longitude.	Males.	Females.	Total.
1895.	N.	W.			
Aug. 1	54 57	169 35	89	46	135
2	54 52	169 14	53	22	75
3	54 32	169 18	2		2
4	54 46	169 35	32	21	53
7	55 13	169 01	1		1
8	54 51	168 51		1	1
9	54 48	169 39	10	16	26
10	55 53	169 21	35	88	123
11	54 57	169 20	64	95	159
12	54 43	168 55	23	12	35
Total			309	301	610

FUR SEALS OBSERVED BY THE AMERICAN WHALER OLGA (NORTH PACIFIC OCEAN), KNOWLES, MASTER.

Date.	Latitude.	Longitude.
1895.	N.	W.
Apr. 16	48 14	162 30
17	50 13	160 21
18	51 38	159 20
19	53 05	158 07
20	54 45	157 00

FROM A REPORT ON THE FUR-SEAL ROOKERIES OF THE PRIBILOF ISLANDS, 1895.

By F. W. True.

LETTER OF TRANSMITTAL.

U. S. Commission of Fish and Fisheries,
Office of the Commissioner,
Washington, February 4, 1896.

Sir: I have the honor to transmit herewith certain "extracts from a report relative to the natural history of the fur seals and the condition of the rookeries on the Pribilof Islands, Alaska, based upon observations made during the season of 1895 by F. W. True, curator of mammals, United States National Museum."

You will recall that Mr. True spent the summer of 1895 in making a study of the seal rookeries of the Pribilof Islands independently of Mr. C. H. Townsend. His final report, which will be taken up largely with a discussion of the natural history of the fur seal, will not be completed for some time, but in the preliminary account of his inquiries he covers fully all the main points of direct interest in connection with the present sealing controversy, so far as that subject came within the range of his observations. It is that part of his report which is now forwarded.

Very respectfully,
Herbert A. Gill,
Acting Commissioner.

The Secretary of the Treasury,
Washington, D. C.

DEAD PUPS.

The matter of dead pups is one which I can only discuss briefly, as the terrible mortality reported in recent years occurs late in the season, after the date on which my observations closed.

I saw a number of dead pups during my sojourn, but do not think that the total would exceed 150 for all the St. Paul rookeries. The largest number were at the north end of Tolstoi rookery, where I observed 70 in one small area and about 25 more a little farther south, on the 15th of August. The area referred to was occupied earlier in the season by a great mass of seals, and I regard the number of dead pups found here as representing the ordinary mortality of the young. These pups were not in the water or at the water's edge or in positions where they could be supposed to have been cast up by storms.

On August 2 I counted 23 dead pups on Ketavie rookery. These were all on the higher parts of the rookery, and there were none at the water's edge. A few dead pups were found on the highest parts of several of the rookeries, and these, as Mr. Townsend suggested, were such as had been worried to death by the bachelors which hang about the rear of the rookeries. On several occasions I saw young bachelor seals snatch pups away from the pods on the higher parts of the rookeries, and badger them about as if they had been cows.

On Ketavie rookery, on July 27, I saw a youngish bull at the back of the rookery seize a pup out of one of the upper pods with his teeth and carry it up the hillside. He dropped it several times, but picked it up again. The pup presently bit at his assailant, and when the attention of the latter was distracted, ran away down the hill again. Another pup, apparently brought up the slope by this same bull, had crawled in under a rock, so that it could not be reached.

On August 5, on Ketavie, I saw a bachelor attempting to copulate with one of these pups. The instinct of reproduction seems to spring up at an early age in the seals, and hence these unnatural assaults on the pups. I agree with Mr. Townsend in thinking that a portion, at least, of the dead pups found high up on the rookeries are such as have been worried to death in the manner indicated. Some of these pups, however, are doubtless such as have wandered away from their mothers, beyond the confines of the rookery, and have died of starvation.

ESTIMATES OF NUMBER OF SEALS.

When Mr. Townsend arrived on St. Paul in July we endeavored to obtain data for an estimate of the number of seals present. With this in view we went to Ketavie, Lukannon, Tolstoi, and the Lagoon rookeries and made an actual count as far as the conditions would permit. As we proceeded it soon became apparent that to count all of the several classes of seals was impracticable. The first difficulty that we encountered lay in the fact that the roughness of the ground prevented us from seeing some of the harems distinctly, and we were unable to go down among the seals without stampeding them. Later we came upon the triangles or wedges of breeding seals massed as close together as it was possible for them to lie. It was necessary to use a field glass in investigating these groups, and as there were no salient points which could be picked out, as the count proceeded the eye soon became confused and the count lost. The larger groups of pups presented the same difficulty. This class was omitted later on, because on areas which had to be viewed from a distance so large a proportion of pups were concealed by the bowlders that the count could not be at all relied upon. We came eventually to count only the cows. At the Lagoon we counted by passing in front of the rookery in a boat, using a low-power glass. The harems were separated here by considerable intervals, and as the whole rookery was in plain view there was no obstacle to counting.

On Ketavie we counted without a glass for the most part, going down among the seals as best we could, and the same course was pursued at Lukannon and Tolstoi.

It can not be claimed that our count is mathematically accurate, but I believe that a sufficiently large area was covered to render the inaccuracy of comparatively little consequence. An actual census could be made only by driving all the seals inland and passing them in review, or photographing the rookeries from overhead, both of which proceedings are impracticable.

The enumeration of cows on the Lagoon, made July 10, was by harems, as follows:

[The numbers indicate breeding females in each harem.]

8	7	28	20	15	20	67	1	1	16	8
1	10	1	9	16	8	18	4	20	31	2
41	14	7	1	22	4	1	16	2	41	1
16	3	23	38	1	2	10	18	6	3	25
16	3	4	32	31	4	25	2	19	1	26
24	2	37	20	4	6	9	48	14	19	16
4	21	15	12	35	7	12	23	16	39	4
26	4	67	24	5						

Total, 1,264.

The enumeration of cows on Ketavie, made July 8 to 10, beginning at the south, was as follows:

[The numbers indicate breeding females in each harem.]

1	21	1	47	29	1	38	12	15	22
1	9	145 (3)	1	9	17	16	1	9	19
12	23	10	2	13	4	2	50	1	24
3	12	9	2	29	4	10	8	1	18
3	9	93 (?)	52	64	5	11	10	25	21
4	4	12	10	1	1	5	24	35	36
35	1	20	29 (3)	12	40	11	17	15	28
10	28 (4)	1	9	5	9	1	5	19	8
28	13	60	11	45 (3)	14	2	7	75	34
8	6	21	13	8	14	10	1	10	52
25	2	2	2	15	29 (2)	13	30	42	43
34	5	14	14	30	19	47 (4)	23	49	13
3	22	15	0	7	4	10	12	16	8
55	89	32	60 (3)	18	1	9	17		

Total, 2,640.

NOTE.—The figures in parentheses refer to the number of bulls with the group of cows. In these cases several harems were of course consolidated.

Mr. Townsend made an enumeration of a portion of Lukannon rookery on July 12, and found 1,940 cows. The portion of this rookery on which he made no enumeration is sixteen one-hundredths of the total area of Ketavie and Lukannon, and it is necessary, therefore, to add 732 cows in making up the total for the two rookeries, which will then be 5,312 cows.

On July 11 I counted the cows on that portion of Tolstoi rookery under the cliffs at the south end, as follows:

[The numbers indicate breeding females in each harem.]

10	7	32	62	4	19	11	22	33	27
7	3	5	20	10	9	11	7	2	3
8	9	2	4	26	15	19	21	27	25
25	13	10	46	3	51 (2)	8	17	8	21
43	41	14	43	13	6	14	8	2	23
6	61	60 (3)	34	9	6	3	18	2	16
16	31	11	14	3	12	13	4	17	3
2	44	13	20	9	41	15	13	5	3
20	10	1	7	7	11	6	10	7	5
24	8	1	16	9	4	29	1	27	13
11	14	9	11						

Total, 1,624.

This portion of Tolstoi rookery is only a small part of the whole area, and the enumeration is chiefly valuable as a basis for ascertaining the average size of harems and for forming an estimate for the whole area.

The area of the several rookeries on St. Paul in July of the present year, as indicated on the maps made by Mr. C. H. Townsend, is shown below. I have divided the total area in the case of each rookery into two parts, on one of which the seals are distributed about as on the parts counted as regards density, and on the other are massed together. The areas are as follows:

	Not massed.	Massed.
	Square feet.	*Square feet.*
Upper Zapadnie	168, 734	51, 854
Lower Zapadnie	131, 725	4, 600
Tolstoi	160, 580	80, 220
Lagoon	82, 241	....
Reef	330, 523	115, 138
Ketavie and Lukannon	226, 303	....
Little Polavina	29, 969	....
Big Polavina	64, 748	16, 239
Northeast Point	378, 240	361, 443

Employing again Mr. Townsend's maps, I find that the 1,264 cows counted on the Lagoon rookery covered an area of 82,241 square feet, making the average occupied by each cow 65 square feet. The 4,110 cows counted on Ketavie and Lukannon rookeries covered 189,712 square feet, or 46 square feet for each cow.

On Tolstoi 1,520 cows occupied 44,699 square feet, or 29 square feet for each.

The average is as follows:

	Square feet.
Lagoon rookery	65
Ketavie and Lukannon rookeries	46
Tolstoi	29
Average	46

If we divide the number representing the total area of the rookeries on St. Paul by 46 we should find thereby the number of cows. It happens, however, as already stated, that on certain portions of the rookeries the seals are massed together, and for these areas it has been decided to consider the average density as double that of the remaining parts, which would give us 23 square feet as the average area occupied by each cow.

The cows on the whole area of the Lagoon rookery having been counted, the number obtained by this enumeration will be included instead of an estimate, and the same course will be taken with Lukannon and Ketavie rookeries.

The result is as follows:

	Cows.
Lagoon rookery	1, 264
Ketavie and Lukannon rookeries	5, 312
Tolstoi, Reef, Little Polavina, Big Polavina, Northeast Point, Upper Zapadnie, and Lower Zapadnie rookeries	54, 860
Total	61, 436

On St. George, by the same method, we find the following:

Rookery.	Area.	Number of cows.
	Sq. feet.	
Zapadnie	128,171	2,786
Starry Arteel	64,329	1,398
North	128,868	2,800
Little East	24,254	527
East	67,884	1,476
Total		8,987

The total for the two islands will be as follows:

	Cows.
St. Paul	61,436
St. George	8,987
Total	70,423

The number of breeding bulls, providing one for every 16 cows, as already determined, will be as follows:

	Bulls.
St. Paul	3,839
St. George	563
Total	4,402

ESTIMATE OF BACHELORS.

To count the bachelor seals on the hauling grounds is a much more difficult task than to count the breeding cows. The bachelors are much of the time in movement, going down to and returning from the water, fighting among themselves, etc. Furthermore, they lie pretty evenly distributed over the areas they occupy, rendering it extremely difficult to select a single point on which the eye can rest as the count proceeds. For these reasons a count of the bachelors is in most places practically impossible. But there are other difficulties as well. The bachelors at the water's edge and back of the rookeries are scattered and frequently in situations in which they can not be well seen. On the large hauling grounds the "drives" cause the number to rise and fall. Where there are a thousand to-day there will be only a hundred to-morrow. Under certain conditions of weather these young males resort to the land in great numbers, while under other conditions they remain in the water. All these disturbances and changes cause any direct count to be of little value.

The counting of the bachelors being deemed impracticable, it remains to consider whether an estimate of their number can be made. It is known by official count how many seals are killed during the season, and counts were also made by myself and by the assistant Treasury agent this year of the number rejected from the majority of the killings.

There is great confusion in the "pods" or little bands of seals when the killers attack them, and the seals rejected when once started often move off rapidly. Hence the enumeration of the rejected seals can not invariably be made with entire accuracy. Still, as I learned by recounting, the error is only slight, and not sufficient to affect the general result. We have then an exact count of the number killed and an approximately accurate account of those rejected. Upon ascertaining what relation the latter bears to the former we can determine quite accurately how many seals are driven off the hauling grounds. The following table embodies these data for St. Paul Island:

Date.	Rookery.	Number killed.	Number rejected.	Percentage of rejected.	Total (estimated) of seals driven.
1895.				*Per cent.*	
June 20	Northeast Point	1,961	1,607	*a* 45	3,568
24	Reef	1,548	1,487	*a* 49	3,035
26	Halfway Point	575	575	50	1,150
July 1	English Bay	751	1,126	60	1,877
2	Zapadnie	861	1,405	*a* 62	2,266
3	Lukannon	364	647	64	1,011
9	Northeast Point	960	1,440	60	2,400
10	do	431	800	65	1,231
15	Reef	1,138	2,322	70	3,460
17	Halfway Point	324	793	71	1,117
19	Zapadnie	834	1,856	69	2,690
22	Northeast Point	827	2,236	73	3,063
27	Lukannon	286	931	76.5	1,217
Aug. 1	Reef (Zoltoi) only	185	704	79.2	889
	Total				28,974

a Estimated.

NOTE.—Some bachelors were killed before June 20, but the number was very small and will not affect the general estimate. These killings were as follows:

Date.	Rookery.	Number killed.
May 27	Northeast Point	6
28	Reef	79
June 1	Northeast Point	3
4	Reef	76
8	Northeast Point	3
13	Tolstoi	184
16	Northeast Point	2
	Total	353

The total number, 28,970, which represents quite accurately the number of seals driven from the hauling grounds during the season, would also represent the number of individual seals on those grounds during June and July, did not the rejected ones return to their place. As it is known, however, that many do so return—and may be considered probable that all those rejected return to one or other of the grounds—it is evident that in this total some seals are counted twice or three times. To find the correct total it will be necessary to make a reduction for those seals which appear in the drives more than once, and this is a most difficult matter on account of the complexity of the problem. Some facts indicated in the foregoing table are of interest in this connection.

It will be observed that the number of seals on each of the rookeries is practically the same at different parts of the season. This agrees with what appears to the eye to be true; that is, in a short time after the bachelors have been driven from a hauling ground there appear to be as many seals present again as there were at first. The numbers from the foregoing table are as follows:

Northeast Point:	
June 20	3,564
July 8 (to 10)	3,631
July 22	3,063
Reef:	
June 24	3,035
July 15	3,460
Halfway Point:	
June 26	1,150
July 17	1,117

Zapadnie:	
July 2	2,266
July 19	2,690
Lukannon:	
July 3	1,011
July 27	1,217

Again, the proportion of seals rejected from the killing grounds increases gradually as the season advances. As shown by the table at the first killing I observed that 50 per cent of the seals driven up were rejected. This was on June 26. On August 1, the last killing of the season, the per cent rejected was 79.2 of the whole number driven up. The increase in the proportion of rejected seals is reasonably regular. That there should be such a proportional increase is of course to be expected, but it appears to be a fact that the relative proportion of killable seals decreases as the season advances, whether a hauling ground has been swept over previously or not. Thus, 50 per cent of the seals were rejected from the first drive from Polavina on June 26, and 64 per cent from the first drive from Lukannon on July 3. Similarly, we find that 73 per cent were rejected from a third drive from Northeast Point on July 22, while 76.5 per cent were rejected from a second drive from Lukannon, which took place five days later.

Another matter to receive attention before a general estimate is made relates to the length of the period during which the bachelors are arriving at the island. My own observations are of no value in this connection, because, as the foregoing table shows, the two largest hauling grounds at least were full before I arrived. It is necessary, therefore, to refer to the statement of other observers on this point.

Bryant, referring to the year 1869, states that "by the middle of June all the males, except the great body of the yearlings, have arrived." (N. A. Pinnipeds, p. 384.) The American Bering Sea commissioners, quoting various observers, state that they "begin to arrive in the vicinity of the islands soon after the bulls have taken up their positions upon the rookeries, but the greater number appear toward the latter part of May." (United States, No. 6, Bering Sea Arbitration, p. 120.)

These statements are not so definite as could be desired, and I do not find any others that are more so; but from the foregoing table it appears probable that while the hauling grounds fill up early in June, bachelors continue to arrive in greater or less numbers until August. If this is not the case it is difficult to understand how so comparatively large numbers of killable seals can be found late in July.

Whether the seals return to the same hauling grounds as that from which they are driven is perhaps of no great moment, as the net result appears to be the same whether they do or do not.

Taking the six weeks in the foregoing table as the period during which the hauling grounds are full, we can arrive at a conclusion regarding the number of bachelors in the following way:

The number killed between June 20 and August 1, as shown by the official count, is 11,045. Earlier in the year 353 were killed, making a total of 11,398. To this amount is to be added the number rejected from the first drives from each of the several hauling grounds, viz:

Northeast Point	1,603
The Reef	1,487
Halfway Point	575
English Bay	1,126
Zapadnie	1,405
Lukannon	647
Total	6,843

We have then to find out how many new individuals were among the seals rejected from the subsequent drives. The proportion rejected from the first drive from Northeast Point was estimated as 45 per cent; from the second drive, 60 per cent and 65 per cent, or an average of 62.5 per cent; from the third drive, 73 per cent. The increase in the second and third drives is 17.5 and 28 per cent, respectively. These percentages we may take to be those of the new individuals.

We may make up the total, therefore, in the following manner:

Number killed June 20	1,961
Rejected June 20	1,607
Number killed July 9 and 10	1,391
Additional per cent rejected July 9 and 10	216
Number killed July 22	827
Additional per cent rejected July 22	413
Total	6,415

This may be taken as the number of seals on the hauling ground during the six weeks. Treating the other hauling grounds in the same manner, we have the following amounts:

Northeast Point	6,415
Reef	5,933
Halfway Point	1,692
English Bay	1,877
Zapadnie	3,551
Lukannon	1,581
Total	21,049

This, it will be observed, is considerably less than the number driven, viz, 28,970, but it represents, in my opinion, much more nearly the correct number of seals present on the hauling ground during the period.

This total, 21,049, is based on the assumption that all the bachelors have arrived by August 1. But as at the last killing, on that date, about 20 per cent of killable seals were still obtainable from the number driven up, it would appear that if killings were made later (at least up to the end of August) a small number of new seals would be obtained.

I calculate that this would not exceed 2,000 seals for all the hauling grounds. Adding this to the total previously obtained, we have 23,049 for the whole number of bachelor seals on the hauling grounds during the season. This includes only the grounds from which drives were made, and we have yet to consider the grounds at Ketavie and the Lagoon, which were not disturbed; also the areas back of the breeding grounds and the fringe at the water's edge. For the Ketavie hauling ground I estimate from my observations that the number should be about 500, for the Lagoon hauling ground 400.

For the areas back of the breeding grounds and the water front no reliable estimate can be made. These bachelors are constantly moving about, and were also more or less disturbed in some places this season, at least by persons passing to and fro. The bachelors at the water's edge doubtless go to the terminal hauling grounds, and may perhaps safely be regarded as already estimated for.

If one-tenth were added for these scattered bands of bachelors, it would probably be sufficient; but this is a purely nominal estimate.

To recapitulate, the total is made up as follows:

Number of seals killed May 27 to August 1	11,398
Additional seals on the hauling grounds from which drives are made	9,651
Seals on the hauling grounds from which drives are not made (Ketavie and Lagoon)	900
Number of seals in scattered bands back of the rookeries	2,195
Total	24,144

Bringing together the estimates for all the classes of seals, we have the following:

St. Paul:		
Bachelors	24,144	
Breeding bulls	3,839	
Cows	61,436	
Pups	46,077	
		135,496
St. George:		
Bachelors		
Breeding bulls	563	
Cows	8,987	
Pups	6,741	
		20,481
Total number of seals on both islands		155,977

In my judgment the foregoing estimate is fairly reliable; but it should be remembered that it is only an estimate. In a matter so extremely complex, and with factors so constantly varying, I do not think any estimate can be made which will approximate the truth more than somewhat remotely.

The chief use of such calculations in the present connection is, in my opinion, for the elimination of fanciful estimates of the number of seals. Thus, a statement that there are a million or half a million seals on the islands may safely be disregarded, as may equally any claim that there are but a few thousand remaining. It is probably as important to know how many seals are on any one or two of the rookeries as to know how many are on all of them, and this can be ascertained with fair accuracy, as shown by the enumerations of Ketavie and the Lagoon rookeries made this year. If it is found in July, 1897, that there are 3,000 cows on the Lagoon rookery, it may be fairly asserted that this rookery has doubled in two years.

PRESENT CONDITION OF THE ROOKERIES AS REGARDS THE DECREASE OF SEALS.

The three questions to which my attention was directed before visiting the islands as the most important ones for consideration are extremely difficult to answer. They relate to the present conditions as regards the decrease in the number of seals, the cause of the decrease, and the remedy. I realize now, perhaps even more fully than before I visited the islands, how difficult it will be to find a solution to these problems which will fill every need and meet every objection. Nevertheless, I address myself to the task, with the hope that what I have to offer may prove at least suggestive.

As regards the decrease in the number of seals, there is little to say. All persons who have visited the islands in recent years are agreed that a decrease has taken place, and I found no reason to dispute this conclusion. Being on the ground during only one season, I was unable of course to make comparative observations, but the condition of the rocks and herbage back of the present rookeries testifies in an unmistakable manner to the fact of their greater magnitude in past years. To take one instance: On the great inclined plain or "parade ground" on the reef, which is now covered with low grass and flowers, and from a little distance resembles a lawn of large extent, the cavities of the lava bowlders are filled with a dull felt-like substance, which upon examination proves to be composed chiefly of hairs of fur seals interwoven and matted down. This substance could not be made up from stray hairs blown hither and thither by the wind, or from such as might be left by the passing seals during a drive. It betokens the former presence of numerous seals for a considerable period on ground now completely abandoned.

Wherever this matted hair is found abundantly the tops of the rocks are worn smooth, a condition due clearly to the presence at some time of living seals.

At the back of all the rookeries, often for a distance of 200 to 300 feet or still more, this phenomenon is observable, and even among the high grass farther back, where the rocks are abundantly covered with lichens, a careful examination reveals the presence of matted hair, though usually in a friable and decomposed condition.

On the Reef "parade ground" I examined an area about 50 feet square, which, according to photographs taken by the commission in 1891, was completely bare in that year, and found that it was fully one-half covered with grass and flowering plants. This indicates that some of the changes at least are of very recent origin, and can in nowise be regarded as ancient.

Such facts as I have mentioned demonstrate that at no distant time in the past the seals covered much more ground than they did this year.

Of the changes which have taken place since last year I can not speak entirely from personal experience. For a knowledge of the conditions in 1894 I have relied on the photographs and charts prepared by Mr. Townsend, naturalist of the *Albatross*. These charts and photographs for 1894 I examined to some extent while on the ground this summer, and more in detail since returning to Washington. In the latter instance I have had the advantage of comparing, side by side in company with Mr. Townsend, those of 1894 with those of 1895.

The work this year was done about ten days later than last, on account of the backwardness of the season. Making all allowances for seasonal and other influences, I have no hesitation in affirming that the seals were considerably less abundant this year than last.

As already explained, the photographs were made under conditions unfavorable in many ways, and some of them are not serviceable for comparison. In others the shrinkage of the rookeries is very noticeable and should be evident to untrained eyes. This is true of the views from stations 1, 4, and 5, Northeast Point; stations 21 and 24, Polavina; station 12, Lukannon; stations 14, 14½, and 15, Ketavie; stations 16, 17, and 18, Reef; station 11 and Station F, Tolstoi; station 7^a, Lower Zapadnie; station, 2 North rookery (St. George), and Station B, Little East rookery (St. George). The changes which are observable result chiefly from a recession from areas of the rookeries, or a general shrinkage along the inland borders. Accompanying these changes is a tendency in breeding grounds, formerly of great continuous length, to break up into detached areas. This is very noticeable at Northeast Point, Polavina, and Lower Zapadnie, St. Paul, and Great East, North, and Zapadnie rookeries, St. George, and may be observed both in the photographs and charts of 1895, when compared with those of 1894. As Mr. Townsend informs me that he will report on these changes in detail, and as the photographs and charts are his own work, and furthermore, as his experience runs back over many seasons, I do not deem it important to enter more into details here. I agree with Mr. Townsend that a noticeable shrinkage of the breeding grounds has taken place since 1894. I regard the herds as in a very precarious condition as regards preservation, and while it is obviously impossible to fix limits in such a case, if the off-shore sealing operations continue as at present I should expect to see the cows practically exterminated in less than five years.

CAUSE OF THE DECREASE OF SEALS.

It has been generally conceded that the decrease of the seals is due to human interference, and in view of the many known cases of extermination by human agency there is no reason for dissent from this opinion. When we go a step further, however, and inquire what special form of interference is responsible for the results observed, we are met at once by diversity of opinion. Men have located and carried on the ordinary operations of life on the seal islands. They have killed seals on the islands. They have intruded upon the resorts of the seals and driven off certain classes of these animals. They have killed mature males and young on land, and both males and nursing and pregnant females at sea. Some of these operations ceased many years ago, and others are still carried on. Out of all these factors of destruction, old and new, we are called upon to select the one or ones which are responsible for the effects observed, and with whose cessation the decrease would likewise cease. In the present state of knowledge I conceive that this can not be done in such a manner as to place the matter beyond dispute. Conclusions have to be based largely on opinions, rather than on facts, and as long as these opinions can be challenged the conclusions will fail to receive universal acceptance.

Putting aside the effects of all past forms of interference, however, as intangible, we know what operations are going on to-day and what is the condition of the seal herds. We know that the seals of all classes have greatly decreased in number and have shown that the decrease is still going on. We know that considerable numbers of male and of nursing and pregnant female seals are killed at sea, and that considerable numbers of male seals are killed on land. Now, whether few or many males remain is of no consequence, so long as there are enough to fertilize the females.

My observations during the past summer show that there are enough, and that they are desirous of taking part in reproduction. If this is not true, why are there always males hovering about the water's edge and attempting to intercept the females as they leave the rookeries? Why are there small harems at the water's edge (and even in the water) which are constantly being broken up by the stronger bulls near by? Why are there new harems formed at the back of the rookeries (the cows with pups) at the close of the season? Why are the pups harassed? If there were not enough bulls to fertilize the females, or if the bulls lacked vigor, none of these things would occur. But they do occur, as I witnessed with my own eyes. Hence, I do not hesitate to state that, in my opinion, the number of bulls is sufficient for present purposes of reproduction, and that the bulls are virile. It is not to be inferred, however, that the number of males has not decreased. This is conceded, but, as already stated, the fact is of no interest in the present connection if enough remain.

When we turn to consider the female seals, we find that the question assumes a very different aspect. It is useless to inquire whether there are enough females. Even if the islands of St. Paul and St. George were covered completely with female seals, there still would not be too many, provided there were males enough to fertilize them. When, however, we find the females decreasing year by year, there is every cause for alarm. Taking the condition regarding males as they are to-day, the question we are considering resolves itself to this: What is the cause of the decrease of female seals? If we can not find a cause which will be accepted by the unwilling as the sole cause, we can at least point to one which everyone must admit demands serious consideration. We have the sworn testimony of the Treasury agents of the islands that they counted this fall on St. Paul 23,000 dead pups. Every unbiased observer is convinced that the cows suckle only their own offspring; hence, unless these pups died of natural causes, it is certain that 23,000 cows were destroyed at sea. That a large number of cows were destroyed by sealers we know from the investigations of the commission, and we know, also, that the pups were in such positions and condition as to indicate clearly that they died of starvation. Is there any reason to look elsewhere for the cause of the decrease of the females? Certainly not.

Now, whether this is the only cause of the decrease of females or not is of no great moment, since, in its operation, it is a sufficient one to depopulate the rookeries. He would be regarded a very foolish man who should spend time and money in investigating obscure causes of the loss of his fowl while the fox was openly stealing hens from the roost. So long as a sufficient cause of destruction is discovered, it is of no practical importance to search for others, since if this one continues to operate it will destroy the rookeries, whether other causes are discovered and eradicated or not.

As it was a part of my instructions to search for obscure deleterious agencies, however, I will say that I kept the matter constantly in mind, but was unable to discover anything of importance. The seals appeared to be healthy and vigorous. I did not see more than five adult dead seals about the rookeries during my sojourn on St. Paul. These were all males. Mr. Townsend informed me of the presence of a dead female on Ketavie rookery, but I did not see it myself. It may be said that there is no mortality of females on the islands before the pelagic sealing begins, as there certainly would be if the seals were in anywise diseased.

No recognized enemies were observed about the islands, with the exception of two killer whales. These I observed for a short time in front of Ketavie rookery, but they appeared only once. The imperfections which one finds among the seals are all such as have their origin in wounds received during combats or result from falling or jumping from high places on rocky ground.

REMEDIES FOR THE DECREASE.

If it be true that the present shrinkage of the rookeries is due to human interference, as I believe it is, the simplest and most effectual remedy would, of course, consist in stopping for a term of years all sealing operations of whatever character and wherever prosecuted. It is certain that no harm could result to the seal herds from this proceeding, and even if the proposition that the decrease is due to human interference should not be sustained (improbable as that may be), the experiment would be worth all it might cost. It may be deemed, perhaps, that the application of this remedy is impracticable for reasons of state, as well as on account of the injustice to those persons who have money invested in apparatus of the fishery. If the present international situation is such that no change covering the whole fishery can be made, it is useless to consider the subject of direct remedies.

It is not within my province to decide whether such a cessation of all sealing operations can or can not be brought about. Taking it for granted that it can not, I may mention two plans, in the nature of indirect remedies, which seem to me worthy of consideration. One of these at least has occurred to other investigators, but whether prior to my own studies I can not say.

It appears to me entirely feasible to brand the seals with a property mark. If the cows are to be so treated, it would be best to place the brand on the back, where it could be plainly seen. This would also have the effect of rendering the skins of the cows unmarketable, and there would be no object in destroying them.

It is, of course, taken for granted in proposing this plan that property so branded would be recognized as property on the high seas. Whether this would be the case I can not venture to decide.[1]

KILLING OF FEMALES BY THE GOVERNMENT OBJECTIONABLE

In conclusion, it may be proper for me to remark that I should deprecate most earnestly the adoption of any plan to bring the fur-seal question to an end by a wholesale butchery of all the seals, male, female, and young, on the Pribilof Islands. I do not think that our Government or any other could maintain its dignity while pursuing such a course. It could only be regarded as a work of spite, which would be unbecoming in an individual and much more so in a nation.

No one having the smallest spark of love for nature and her works who had visited the fur-seal islands could for an instant entertain a proposition for the slaughter of the seal herds. To any such it would seem little less than wholesale murder.

Putting sentiment aside, it does not seem to me that such a course is necessary. Even if the patrol of Bering Sea is suspended and sealers are allowed to approach the islands, the time will speedily come when sealing as an industry will cease to be profitable and will be abandoned. There will still be a remnant of seals which, unmolested, will increase and once more cover the breeding grounds. In the interval there would be time for the cultivation of public sentiment in this country and Europe favorable to the preservation of the seals, and to arrange plans of international protection.

On the other hand, if the breeding seals are slaughtered on the rookeries, one more species will be added to the already formidable list of those which have been exterminated by unwise and improvident human action. Such a proceeding would be in the highest sense immoral, and no less inconsistent with the true aims of a civilized nation.

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[1] Mr. True suggests further in respect to this subject that, in case of the presence of pelagic sealers in Bering Sea next season, the entire body of seals might be driven back from the rookeries and retained in the inland lakes and lagoons for about six weeks, or during the period when pelagic sealing is mainly carried on in that region. The execution of such a plan is entirely practicable with regard to all grown seals of both sexes, but it would result in the destruction of the pups born that season. If, however, the seals were held inland for only three or four weeks, the majority of the pups would probably be saved, as they could exist for that length of time without feeding, while the retention on land of the grown seals, even for so short a space of time, would undoubtedly cause the abandonment of nearly all pelagic sealing.

OBSERVATIONS DURING A CRUISE ON THE SEALING SCHOONER LOUIS OLSEN, AUGUST, 1894.

By A. B. ALEXANDER.

LETTER OF TRANSMITTAL.

U. S. COMMISSION OF FISH AND FISHERIES,
Washington, D. C., January 5, 1895.

SIR: In response to your request of the 3d instant for copies of the reports for 1892, 1893, and 1894 of Mr. Townsend on the seal rookeries of Alaska, and the report for 1894 of Mr. Alexander on pelagic sealing, I beg to state that no report on the condition of the seal rookeries in 1892 was made by Mr. Townsend, the subject having received the attention of Mr. J. Stanley-Brown, a special agent of the Treasury Department. Mr. Townsend's report for 1893 was transmitted to the Secretary of the Treasury on February 26, 1894, and a second copy, as also Mr. Townsend's preliminary report covering the work of 1894, to the Assistant Secretary, Mr. Hamlin, on December 4 and 5, 1894. Herewith I have the honor to forward copy of the report of Mr. Alexander covering his observations during the summer of 1894 on pelagic sealing.

Very respectfully,

HERBERT A. GILL,
Acting Commissioner.

Hon. C. S. HAMLIN,
Acting Secretary of the Treasury.

CRUISE OF THE LOUIS OLSEN IN BERING SEA.

On May 28, 1894, I left Seattle, Wash., in the *City of Topeka* for Sitka, and from there took passage in the *Crescent City* for Unalaska. Soon after arriving at the latter place I joined the *Albatross* and remained by her until the evening of the 29th of July, when I joined the pelagic sealing schooner *Louis Olsen*, of Astoria, Oreg., Captain Guillams, master, who very willingly gave me passage for the purpose of making observations on the seals taken by him during the open season in Bering Sea.

The next day, in latitude 54° 38′ north, longitude 167° 04′ west, we saw our first seals, 20 in number, 12 of which were "sleepers." In the afternoon we saw 6 seals about a half mile from the vessel playing in a bunch of seaweed. The sea at the time was perfectly smooth, with a light air stirring. Two hunters and myself started out in a boat to watch them and see how near we could approach without disturbing them. We soon learned that they were unusually tame, as we approached near enough to touch one with a spear pole. They showed little signs of fear notwithstanding that we were within 30 feet of them for fully five minutes. Diving under the seaweed and suddenly thrusting their heads up through it seemed to afford them great pleasure. They paid but little attention to us and seemed almost indifferent as to how near we approached, so long as we did so quietly. This caused the hunters to exclaim several times, "If we only had a gun we could kill them all." Under the circumstances it was but natural that the thought of a gun should be uppermost in their minds. Early in the spring, both on the Northwest coast and off the coast of Japan, seals are sometimes found which evince little signs of fear, but after one day's shooting on the ground they become very wild and mistrustful, and, like a crow and some land animals, seem to scent a gun in the air.

The following day, July 31, seals were plentiful. The wind being light during the previous night, our position had changed but little.

On August 1, at a very early hour, the spears were brought forth and the seal on them broken. While this was going on many remarks were made in regard to the first day's trial. Some of the hunters were already discouraged, and were confident that they were only wasting time by attempting to use spears. The thought of being obliged to adopt the primitive weapon of the Indian was indeed humiliating to them. A few on board felt more hopeful and were willing to give the spear a fair trial. Ever since leaving Unalaska the hunters had been practicing at throwing the spear pole. Every piece of floating seaweed or other object which came within range had been a target. On several occasions the boats had been lowered and a supply of chips and small pieces of wood taken along. These were thrown ahead of the boat as targets to throw at. It was soon found that an object that could be readily hit at a distance of 25 or 30 feet from the vessel was not so easily reached from a boat, as the smallest wave would cause the latter to move just enough to make the pole go wide of its mark. A day's practice in throwing from the boats had the effect of teaching the hunters the various ways of holding the spear to make more sure of its hitting the mark under the many conditions of sea and wind. All this time spear throwing had been carried on with lifeless objects for a mark. The opportunity was about to present itself of exhibiting skill in throwing at something which, if missed the first time, would not be likely to remain stationary long enough to give the marksman another trial. A cool head and steady nerves would be the special requirements to insure a successful day's hunt should seals be plentiful.

The first day of August did not prove a success so far as sealing was concerned, the weather being too foggy to send out the boats. Scattering seals were observed all day, but they were all "travelers"; that is, they were all moving in various directions. Our noon position was latitude 56° 11′ north, longitude 172° 01′ west. The next day seals were less numerous. None were observed in the forenoon; in the afternoon 12 were seen, of which all but 1 were traveling to the westward. This individual was asleep; a boat was quickly lowered and the hunter on watch was rowed toward it. Before the boat had covered half the distance the seal showed signs of waking and shortly after becoming aware of approaching danger it disappeared. Our noon position on this day was latitude 57° 21′ north, longitude 173° 46′ west. Seals here were not so plentiful as they were farther south. In the afternoon we hove to and caught 2 cod in 65 fathoms of water. No more seal life was observed until the afternoon of the following day, when 2 sleeping seals were sighted in latitude 57° 50′ north, longtitude 173° 48′ west. Five boats were sent out. They returned at 5 p. m., having taken no seals, although 8 had been seen, but they were all "travelers." Heavy fog and strong indications of the wind breezing up fresh caused the boats to return earlier than they otherwise would. In the evening, the vessel being hove to, several seals came close alongside. They seemed to be very curious to know what we were. All the spears on board were repeatedly thrown at them, but they had the good sense to keep just out of range. Whistling had the effect of enticing them close aboard, but the sight of a spear or two being aimed at them would cause them, without any apparent effort, to increase their distance by 20 or more feet.

The first seal captured by the *Olsen* was on August 4 in latitude 57° 50′ north, longitude 173° 48′ west, the same position recorded on the previous day. At 8.45 a. m. sail was made and at 10.45 the boats were lowered, 2 "sleepers" having been seen. The weather being foggy the boats were soon lost to sight. The vessel was hove to, it being much easier for the boats to keep the bearing of the vessel than for the vessel to keep track of the boats.

As soon as the boats had left, a hand line was put over in 70 fathoms of water. An hour's fishing resulted in 18 cod, the average weight of which was about 12 pounds; the largest weighed not far from 30 pounds. All but 2 of the cod were in a healthy condition; these 2 had sores on their backs about the size of a half dollar, which had eaten nearly to the back bone. This instance is especially mentioned on account of the position of the sores. In both cases they were situated near the neck directly over the vertebra; they were as round and smooth as if cut with a knife.

Notwithstanding that the fog did not lift during the day, the boats remained out until 9 p. m. The result of the day's hunt was 12 seals, 4 males and 8 females. One of the seals had previously been speared in one of its flippers, as it was nearly severed from its body, showing that the seal must have had a hard struggle to free itself. The largest number of seals was taken by two boats, each bringing in 5; two other boats captured 1 each, and the remaining two boats brought in nothing. About 50 seals had been observed from the boats, the most of which were awake. Only an occasional individual had been noticed during the day from the vessel, the fog being too dense to see more than an eighth of a mile. In no instance was the first seal thrown at captured, and it was only after repeated attempts by each hunter that one was hit. The excitement produced by the desire of each hunter to be the first to capture a seal, combined with the inexperience of throwing the primitive weapon, was no doubt the chief cause of the poor results. The 8 females captured were all nursing seals: but little food was found in their stomachs, and that was too much digested to determine its character.

On the 5th the wind and weather were not suitable for sealing, a very fresh southeast wind prevailing, and in order to keep our position the vessel was hove to under easy sail. A large number of seals was noticed. They apparently had no fixed course, but would swim in one direction a half a mile or so, and then turn and go in an opposite way. The wind continued fresh, with a rough, choppy sea until the following noon, when the fog which had come in during the night lifted and the wind suddenly subsided into a calm. The boats were put in readiness and sent out for an afternoon's hunt. Considering the state of the sea and the time of starting, a fair afternoon's work was done, 19 seals being landed on deck by 8.30 p. m. Fifteen of the number were females and 4 males. Only 6 had food in their stomachs. Every hunter reported seals numerous, about half of the number being asleep. They slept in bunches of 6 and 8, and when aroused from their slumber were very tame. but owing to the inexperience of the hunters with spears in a comparatively rough sea, the successful throws were few and far between. Had the hunters been provided with shotguns, instead of spears, it is safe to say that a hundred or more seals would have been nearer the day's catch. During the absence of the boats a large number of traveling seals had been seen from the vessel, and also an occasional "sleeper." One of the latter was observed close aboard a little on our lee. It evidently was sleeping soundly, for neither the slatting of the sails nor the blowing of the fog horn had the effect of awakening it, and it was only when the scent of the vessel reached it that it showed signs of life. After being fully aroused it did not exhibit any great signs of alarm, but played about not far off for sometime. It seldom happens that a seal will show such indifference to its surroundings as this one. The captain and mate said they had never in all their experience seen a seal so tame. The general opinion on board was that it was due to there being no firearms used or hunting allowed in Bering Sea for the past few years that caused the seals thus far observed to show so little fear of man.

The largest catch during any one day was taken on August 7. The day commenced with a gentle breeze from the south and a smooth sea. A light fog hung low over the water, which prevented the boats from being seen more than 20 yards. At 8 a. m. the last boat shoved off, and they did not appear again until evening. The noon position of the vessel was latitude 58° 30′ north, longitude 173° 56′ west. In the forenoon hand-line fishing was carried on. The depth of water here was 60 fathoms. Six good-sized cod were caught in quick succession; 2 males and 4 females. Their stomachs were well filled with food. In the stomach of a large female was found an octopus which had recently been swallowed, as its skin showed no discoloration. Cod were abundant, and we could have filled the decks in a day's fishing with a single line. Their abundance may have been the cause of seals being plentiful in this region. In the evening the boats all returned nearly at the same time, bringing in 34 seals, 30 of which were females. Twenty-four of the number had food in their stomachs. The material, however, was finely masticated and hard to identify, but a portion of it looked very much like the flesh of cod. If this supposition is correct, the question arises, Did the seals dive to the bottom in 60 fathoms and bring their prey to the surface? As a rule cod are found very close to the bottom, especially in deep water, and it is not probable that they were at or near the surface here. The most satisfactory evidence the writer ever had that seals are deep divers was obtained two years ago on the Fairweather Ground, a large bank off the coast of Alaska, while on a cruise in the revenue cutter *Corwin*. We were about to return to the ship, at the end of a successful afternoon's hunt, when a large male seal suddenly came up close to our canoe—not over 30 feet away—with a very large red rockfish in its mouth, which it immediately proceeded to devour. The fish was alive, and could plainly be seen struggling in the seal's mouth. Our position at the time was some 75 or 80 miles offshore from Yakutat Bay. We had no means of ascertaining the depth of water, but it could not have been much less than 100 fathoms. The red rockfish, like the cod, also generally swims close to the bottom, although it may possibly sometimes feed near the surface. The writer does not maintain that seals can go to the bottom in 100 fathoms, but he does believe that they can dive much deeper than is generally supposed.

All the hunters on this day reported seals plentiful, but could find very few asleep. Had the sun been shining it is safe to say that the majority of those with food in their stomachs would have slept during the greater part of the day, for as a rule seals with full stomachs sleep when the sun is out, the air warm, and the sea smooth, or comparatively so. Their time of sleeping, however, is not always when conditions are favorable, for after a gale of long duration they are frequently seen asleep when the air is cold and the sea uncommonly high, at such times being completely exhausted. It is not an infrequent sight during the winter and spring months, at the end of a long and heavy gale, to see seals sleeping soundly in a snow storm, the exposed portion of their body being covered with snow. In consequence of the seals being restless on this day, a great many of the 34 taken were what is known to sealers as "finners," that is, about half asleep, rolling about and scratching themselves. Sometimes "finners" are hard to approach, and at other times very easy. A restless one will try very hard to take a nap, but just as he gets comfortably fixed something disturbs him, and holding his head up he will take a look all around as if danger were scented. They are then difficult to spear.

Indians seldom pay any attention to moving seals when hunting with spears; they think it a waste of time. White hunters, when they can find no sleeping seals, frequently give chase to "finners" and "travelers," and in many cases are rewarded for their trouble. The hunters on the *Olsen* soon found that few seals could be taken on certain days if they only selected sleeping ones. Many haphazard throws were made at swimming and finning seals, the majority of which were failures, but enough good shots were made to make the experiment a paying one.

For several days seals had been observed chasing some kind of fish, and during this last day's hunt they were quite plentiful. Only a single individual would be seen; it would dart first in one direction and then in another, and occasionally would make a desperate leap out of the water. Presently a seal would be noticed not far off swimming as rapidly and in as many different directions as the fish. On the day in question 2 seals were speared just as they came to the surface, each with one of these fish in its mouth. The seals did not relinquish their hold when speared, but kept a firm grip until knocked on the head. The fish proved to be Alaskan pollock. Both of the seals were large males, one probably between 8 and 10 years old.

The two following days, August 8 and 9, the weather was too boisterous for sealing; wind southeast and every indication of a gale. We lay to under the foresail in order to keep as near our position as possible. A heavy sea set in from the westward, but the wind did not increase above a strong breeze. Scattering seals were about each day, all traveling to the westward. From observation we learned that during stormy weather seals traveled in an opposite direction to the wind. In a gale they are far more numerous on the lee side of the Pribilof Islands than to the windward of them. When the wind is heavy and the sea rough seals as a rule travel from the seal islands directly to leeward or nearly so. Just how much the wind changes the course of the main body of seals would be hard to say, but so far as our investigations extended, in connection with the traveling herd which came under our notice, we are inclined to think that seals within 100 miles of the seal islands bound to the feeding grounds will, in most cases, seek the grounds to the leeward of the group. Seals in a gale take every advantage of wind and sea; it is necessary that they should, for there is evidently a limit to their endurance.

On the morning of the 10th light winds prevailed, but a choppy sea, combined with a long, rolling swell from the west southwest, rendered it unfit for sealing, although scattering seals had been noticed. Two days of idleness had made everybody on board anxious to get out in the boats. In the afternoon the wind fell to a calm, and the boats were put over in latitude 58° 27′ north, longitude 172° 46′ west, and remained out until evening, bringing in only 3 seals. Very few were seen from the boats, although they covered considerable ground during the day. Seals were equally scarce in the vicinity of the vessel, only 6 being observed. One of these, more bold than the others, kept circling around the vessel, coming nearer each time. Finding that it was inclined to be inquisitive its approach was encouraged by continual whistling by those on board. It was finally enticed alongside and captured, the spear passing through one of its hind flippers. It fought bravely for life while in the water, but on being hauled on board its power was greatly lessened. It did not, however, give up without a desperate struggle to regain its liberty. At one period of the fight it drove everybody from the main deck, and it was only when a noose was thrown over its neck and its head hauled down to a ring bolt that it was mastered and could be knocked upon the head. The catch of seals for the day was 4, 3 females and 1 male. The total catch to date had been 69, 13 males and 56 females.

The next day, August 11, the boats made an early start. Everything looked favorable for a good day's hunt, the wind being light and the sea smooth—two things which are almost indispensable in seal hunting. No seals had been noticed during the morning, but it does not necessarily follow that because none are observed from the vessel they are not about, for it frequently happens that good catches are made under those circumstances. This was not one of those exceptional days, however, the catch amounting to only 13—3 males and 10 females. Seals had been comparatively plentiful, but were not inclined to sleep and were too wild to approach. A piece of an Alaskan pollock taken from a seal's mouth was brought in by one of the hunters. A series of trials was made for bottom fish, but with negative results; we seemed to be drifting over barren ground. The noon position on this day was 57° 42′ 38″ north latitude, 172° 52′ west longitude.

Our pleasant weather was about to be broken for a considerable length of time, for the 12th began with a gale from the southeast, accompanied by a heavy sea. We lay hove to under single-reefed foresail and trysail. In the afternoon spoke with the schooner *Teresa*, of San Francisco; also saw the schooner *Kate*, of Victoria, British Columbia, a short distance away. Seals were frequently seen all through the day. In the early part of the night the wind increased to a heavy gale, but in the latter part it decreased in force and hauled to the west-southwest. A heavy sea kept up all day. In the forenoon a vessel was sighted low on the horizon. An occasional seal was observed.

On August 14 the weather was pleasant, but the wind fresh from the westward. In the evening we boarded the schooner *Fawn*, of Victoria, British Columbia, which reported losing a boat and three men on the 11th, but they were afterwards picked up. The *Fawn* had an Indian crew and had taken 20 skins in Bering Sea. This news gave our hunters considerable encouragement. The noon position was latitude 57° 37′ north, longitude 173° 14′ west.

August 15 was marked with pleasant weather in the early part of the day, becoming very squally in the latter part, with rough sea. Noon position, latitude 57° 11′ north, longitude 173° 09′ west.

On August 16 we had variable weather; clear in the morning, thick and squally in the afternoon, with very rough sea. But few seals were seen. The noon position of the ship was latitude 57° 04′ north, longitude 172° 30′ west.

At 7 a. m. August 17 made sail and ran to the southward; wind northwest and fresh, gradually decreasing to a light breeze in afternoon. A heavy fog came in later in the day. Noon position, latitude 56° 54′ north, longitude 172° 45′ west. We continued on our course until 8 a. m. the next day, when we saw a seal "finning" close by. A boat was quickly manned and started in pursuit, but the seal was on the alert and escaped. Shortly after this a "sleeper" was noticed not far off on the weather bow. Another boat was hoisted out and rowed quietly toward it, no attempt being made to throw the spear until within 20 feet. It was easily captured. Its stomach was found to be well filled with food, which was no doubt the cause of its sleeping so soundly.

Later in the day all the boats went out, but returned at the end of three hours with only one seal. The sea was smooth, with little wind stirring, but the air grew suddenly chilly and the sky very cloudy, which practically put an end to the chances of seals sleeping for the day. The hunters claimed that had they been provided with guns the day's catch would have been at least 60 or 70 seals. On a day like this when seals showed no inclination to sleep shotguns in the hands of skillful hunters would have done very destructive work. In the early days of pelagic sealing the hunters sought sleeping seals only, but they have learned the movements of the seal so thoroughly that "travelers" and "finners" are almost as readily taken as sleeping ones.

Hand-line fishing was carried on from the vessel in 60 fathoms of water. In one hour 10 cod were caught, their average weight being about 9 pounds. It was estimated that the largest weighed 30 pounds, the smallest 4 pounds. In their stomachs were found small starfish, prawns, squid, medusæ, and a quantity of decomposed fish.

Unfortunately, this was our last day's hunt, as from this time on we had stormy weather and heavy gales. Eighty-four seals had been taken—16 males and 68 females. All the females were nursing cows except one, which was a yearling. The last seal caught by the *Olsen* was taken in latitude 56° 05′ north, longitude 172° 17′ west.

Early in the morning of August 19 the weather was pleasant, with indications of a suitable day for sealing, but shortly after the wind began to freshen from the southeast, gradually increasing in force and hauling to the westward. We lay to under a double-reefed foresail, encountering heavy squalls at times. Our noon position was latitude 55° 39′ north, longitude 172° 12′ west.

On August 20 there was a heavy gale from the northwest and a very high sea running. We ran before the wind for three hours hoping to escape the heaviest part of it, but no perceptible difference was felt. We then lay hove to until 10 p. m., at which time we again kept off before the wind, and ran until 10 a. m. the next day. About this time we saw several seals, and soon after ran close to a bunch containing five, all huddled together. It was evident that they were well tired out, or else they would not have been asleep in such weather. Our noon position was latitude 54° 38′ north, longitude 168° 01′ west. In the afternoon we sighted several vessels.

On the 22d we bore away for Unimak Pass, the wind north-northwest and blowing a gale, followed by a heavy sea. On the morning of the 23d sighted the lower part of Akutan Island, the top of which was enveloped in a heavy fog. All through the day seals were plentiful, and many of them asleep. During the past few days enough seals had been seen to induce a vessel to lay by and wait until the weather should moderate, but the captain thought bad weather had set in for the fall, and accordingly had made up his mind to go home. He made a mistake in so deciding, for after we had left and were on our way home good catches were made by all the vessels that remained.

At 6 o'clock in the evening we had left Unimak Pass behind us and were standing on an east by south course. The next day, when about 75 miles from the pass, saw a sleeping seal, and 10 miles farther on saw two more. When about 200 miles off shore salmon were noticed jumping. They were so near that we could hardly mistake the species. Whales were also plentiful. For the first two or three days after leaving Bering Sea the weather was pleasant, but during the greater part of the voyage home heavy gales from the westward prevailed. On the evening of September 6 we arrived at Victoria, having been twelve days on the voyage home.

The writer was very kindly treated by the captain, officers, and crew of the *Olsen*, who did everything in their power to forward his inquiries. Had the *Olsen* encountered the favorable conditions which many of the vessels did, much more extensive and important observations could have been made. It was subsequently learned that during the time we were having exceedingly stormy weather, often hove to in a gale, many vessels of the fleet operating several degrees farther south were having pleasant weather and making good catches every day.

SYNOPSIS OF THE SEALING CRUISE OF THE LOUIS OLSEN ON THE JAPAN COAST IN 1894.

The schooner *Louis Olsen*, of Astoria, sailed on a sealing voyage, bound for the coast of Japan, January 1, 1894. Like the majority of sealers intending to hunt on that coast, she made a southern passage, going to the southward of the Sandwich Islands and close to the Bonin Islands. Sealers frequently call at the latter group for water and make such repairs as may be needed. These islands are situated not far from the sealing ground where seals are taken early in the spring.

The boats were lowered for the first time on March 12. The next day and the following one 74 seals were taken. On the 16th a heavy gale from the southeast came on, but subsided on the 17th, when hunting was resumed.

On March 22, in latitude 37° 44′ north, longitude 144° 02′ east, a schooner was sighted bottom up, which proved to be the sealing schooner *Mascot*. She was afterwards seen by other vessels, and attempts were made to cut through her side and secure the skins, of which, it was understood, there were about 500 in her hold, but without success.

It had been noticed that the current was very strong and very irregular, making it difficult to trace the vessel's track by dead reckoning. On the 25th a clear sky afforded the opportunity for a good observation, and it was found that the current had carried the vessel 75 miles to the north-northeast, although she had been headed southwest by south. An irregularity in the currents was subsequently noticed on all parts of the coast visited.

On March 26, in latitude 38° 39′ north, longitude 144° 27′ east, a sealing boat was discovered bottom up, painted green on the outside and red inside. It had been hove to, with mast, sails, and oars out, for a drag. A shotgun, a "sticking" knife, with the letters "W. B." cut in the handle, and a seal skin were found in it, the skin being considerably decayed.

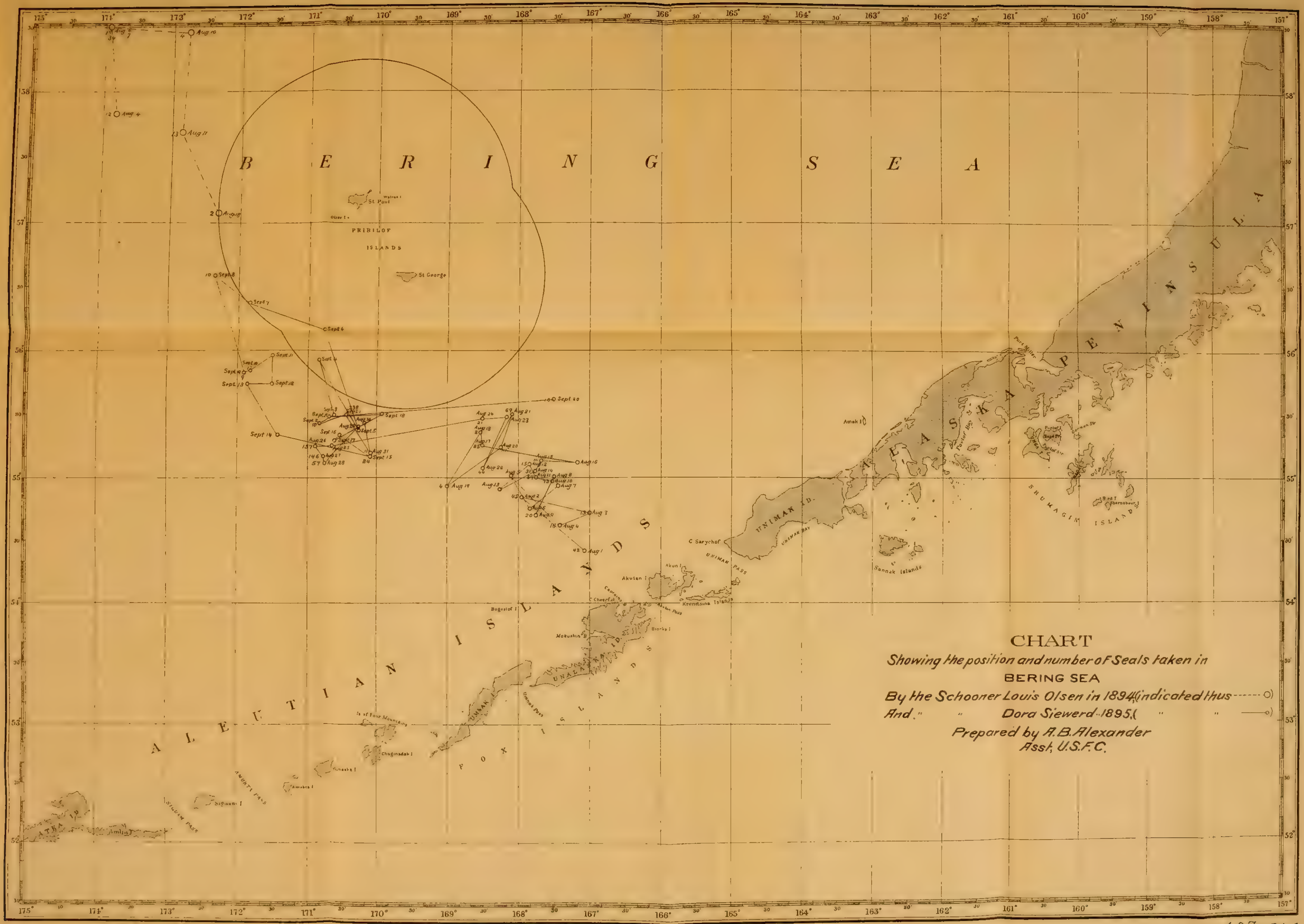
We spoke the schooners *Lillie L.*, of San Francisco, and *Penelope*, of San Pedro, on March 28 and 31, in latitude 39° 02′ north, longitude 144° 44′ east. Heavy gales prevailed until the 1st of April. Fair weather continued until the 9th, during which time 210 seals were taken. Stormy weather again came on, which lasted for three days. On May 11 spoke with the schooner *Casco*, of Victoria, in latitude 39° 43′ north, longitude 142° 54′ east. Very little sealing was carried on until the 18th. On the 19th, two of the boats went astray in latitude 37° 02′ north, longitude 146° 03′ east, and no tidings of them were obtained until the 26th, when the schooner *Kate and Ann*, of Victoria, was spoken and reported that they had been picked up by the schooner *Penelope*, of Victoria.

Sealing was carried on till May 3, when a heavy gale came on, which continued until the evening of the 7th, at which time the *Olsen* sailed for Hakodate. In the afternoon of the next day she entered the Straits of Tangar, and in the evening came to anchor in the above-mentioned harbor.

On May 16 sealing was again commenced in latitude 40° 55′ north, longitude 142° 58′ east, when she also spoke with the *Dora Siewerd*, which reported having 1,300 skins. The following day fell in with the schooner *Penelope*, and received on board the hunters that went astray on April 19. On May 26 picked up a boat and crew belonging to the schooner *Enterprise*, of Victoria, in latitude 41° 50′ north, longitude 142° 26′ east. The next day spoke with the schooner *Umbrina*, of Victoria, which had taken 2,100 skins.

Hunting was carried on without interruption until June 10, the total number of skins taken up to date being 1,055. No more hunting was done on the Japan coast. On June 25 the *Olsen* arrived at Attu Island and on July 15 at Unalaska.

I was informed by the captain and hunters of the *Olsen* that full nine-tenths of the seals taken on the Japan cruise were females, and that it is very seldom that a bull is killed. I have since talked with a number of hunters belonging to other vessels, and they all say that the Japan catch of seals consists mostly of females. A few more males are found at the Copper Islands, but the percentage there is small.



CHART

Showing the position and number of Seals taken in

BERING SEA

By the Schooner Louis Olsen in 1894 (indicated thus ------○)
And " " Dora Siewerd 1895 (" " ——○)

Prepared by A.B. Alexander
Asst, U.S.F.C.

Base Map prepared by the U S Coast & Geodetic Survey

S Doc 137 54 1

OBSERVATIONS DURING A CRUISE ON THE DORA SIEWERD, AUGUST-SEPTEMBER, 1895.

By A. B. Alexander.

LETTER OF TRANSMITTAL.

U. S. Commission of Fish and Fisheries,
Office of the Commissioner,
Washington, March 9, 1896.

Sir: I have the honor to transmit for your information a report by Mr. A. B. Alexander, fishery expert of the United States Fish Commission steamer *Albatross*, entitled, "Report of observations made during a cruise in Bering Sea in the sealing schooner *Dora Siewerd*, in August and September, 1895." The preparation of this report has only recently been completed.

Very respectfully,
Herbert A. Gill,
Acting Commissioner.

The Secretary of the Treasury,
Washington, D. C.

CRUISE OF THE DORA SIEWERD IN BERING SEA.

Pursuant to instructions from the Hon. Marshall McDonald, United States Commissioner of Fish and Fisheries, to secure passage on a pelagic sealing vessel for the purpose of making a cruise in Bering Sea, with the object of gathering information concerning the pelagic habits of fur seals, the methods employed for their capture at sea, their food, the proportion of each sex represented in the catch, etc., I left the *Albatross* at Unalaska, the middle of July, 1895, to await the arrival of the sealing fleet. Subsequently accommodations were obtained, through the kindness of Capt. H. F. Siewerd, on his vessel, the *Dora Siewerd*, a schooner of 100 tons register, and one of the largest in the fleet. She carried 18 canoes and 2 boats, and a crew of 36 Indians and 9 white men. As two Indians go in a canoe, the spearsmen and boat steerers were equally divided.

The writer went on board the *Siewerd* in the evening of July 27, but owing to stormy weather she did not sail until the morning of the 31st, getting under way in company with 27 other sealing vessels. The wind being light we were obliged to anchor off Ulakhta Head. Hand lines were put over here and fishing carried on for two hours, resulting in the capture of 22 cod and 4 halibut.

Early in the afternoon, with a light wind from the eastward, we worked toward Cape Cheerful, which, the next morning (August 1), bore southeast 25 miles, the fleet by this time being considerably scattered. At 9 a. m. 2 sleeping seals were observed, and shortly afterwards the vessel was hove to and the canoes put over. Each hunter among the Indians was anxious to secure the first skin, a superstition prevailing that he who kills the first skin at the beginning of a cruise will be attended with good luck during the remainder of the season. No time was lost in getting the canoes in the water, as a number of other vessels in sight had already lowered their boats. After the canoes had gotten about 2 miles ahead, the vessel followed in their wake; and as the day was clear they could be seen for a long distance. Occasionally a sail would be seen to lower, which indicated that the canoes were among seals.

Before entering into a discussion of the details of my observations it may be well to state that the positions of each day's catch will be found in appended Table No. 1, the same corresponding with those given in the vessel's official log. The noon position each day is shown in Table No. 2, in which is also recorded the direction and force of the wind, the barometer reading, and the temperature of the air and water. The temperature of the water was taken 5 feet below the surface. The material found in the stomachs of seals has been labeled with reference to the noon position.

In the afternoon we passed numerous patches of seaweed and kelp. In a few instances seals were seen with their heads and flippers thrust up through this floating material. Occasionally they would dive and swim a short distance, soon returning to the surface, however, rolling over and over in the tangled seaweed, but sometimes stopping in their play on the alert for danger. When on sealing ground, hunters always carefully inspect floating seaweed, and, as a rule, if there are seals about, they are almost sure of finding one or more in each large patch. Late in the afternoon we passed close to such a patch, covering a considerable area, in which 6 seals were playing. They paid no attention to the vessel, although within 100 yards of them. A hunter with a shotgun could have captured 2 or 3 of the number, and an Indian with a spear would have secured at least 2.

At 5 p. m. the canoes returned with a catch of 42 seals. Three of the males were about 5 years old, all the others of both sexes being from 2 to 4 years old. Their stomachs were nearly all empty, a few containing some material, which, however, was too much decomposed to be identified. The hunters reported seeing but few seals asleep, and these appeared uneasy. Most of those observed awake were finning. No great body of seals had been noticed, and in such pleasant weather, if there had been many on the ground, 18 canoes and 2 boats could have picked up 100 or more. This number of boats, traveling, as they do, in a path from 10 to 15 miles wide, must necessarily see nearly every seal within that belt. The few seals seen traveling to-day were going toward the northwest.

The chief of the tribe reported hearing the discharge of firearms a short distance to windward of his canoe, but he could not tell to what vessel the boat belonged.

The next day, August 2, the boats were lowered at 7 a. m. The weather bid fair for a successful day's hunt, the wind being north-northwest and light, and the sea smooth. In the early part of the forenoon we jogged close to 3 seals playing. Frequently they would roll

CANADIAN SEALING SCHOONER DORA SIEWERD, BERING SEA.

CANADIAN SEALING SCHOONER KATHERINE.
(Formerly called Black Diamond.)

over several times, stop suddenly to scratch themselves, and stand upon their heads with their hind flippers about 2 feet out of water. They repeatedly performed this operation. When quite near them one of the seals lifted its head up, but the sight of the vessel caused no alarm. Having no boat to lower or spear to throw, a loud noise was made by shouting and beating upon a tin can. This did not have the effect of frightening them, but a light thump on the rail of the vessel caused them to dive instantly, and when next seen they were about 200 yards away. Pausing to look at the object which had frightened them, they then swam rapidly away in an easterly direction.

From the above it would appear that seals are ordinarily but little frightened by the presence of vessels, provided they are to leeward of them. Had we been on the windward side the seals would have taken alarm almost instantly, and would either have dived or swam rapidly away.

At 1 p. m. a heavy fog bank appeared in the northwest, and shortly afterwards the canoes and one boat returned. The other boat had evidently gone astray, but as the weather was smooth no great anxiety was entertained for her safety. Forty-five seals were brought on board, 26 being males and 19 females. All the females except 2 were with milk. Their stomachs were mostly empty.

Through the night the weather continued foggy. Early the next morning, August 3, a sharp lookout was kept for the missing boat, and also for seals. No attempt had been made to lower the canoes although the sea was comparatively smooth. The light fog which hung over the water, in connection with the fact of the missing boat, caused the Indians to hang back. At 7 a. m. a sleeping seal was observed under our lee close aboard, but not in a position to detect us by the sense of smell. A canoe was soon launched and started in pursuit, but the short, choppy sea made it somewhat difficult to capture it. In calm weather, or at times when there is only a light wind stirring, a canoe in approaching a seal is generally paddled directly from the leeward, but in a choppy sea, such as prevailed on this occasion, an Indian always approaches side to the wind, which brings the canoe in the trough of the sea and prevents it from making any noise that would disturb the "sleeper."

About noon the missing boat returned, bringing the skins of 2 seals, 1 male and 1 female.

At 1 p. m. another sleeping seal was observed close under our lee. In ninety-nine cases out of a hundred a sleeping seal will awaken when a vessel is close to it to windward, but not so with this individual, for it slept on wholly unconscious of danger, and was easily captured. At this time the weather showed signs of clearing, and soon afterwards the canoes were lowered. The vessel continued jogging to the westward under sealing canvas. One vessel was in sight. Three hours later the canoes began to return, the wind having increased in force, accompanied by a choppy sea, which prevented seals from sleeping. They were reported scarce, and the few taken bore out this statement. The day's hunt amounted to only 13 skins, 6 males and 7 females. Four of the females were with milk. Two of the males were quite large, about 5 years of age or over, the others from 3 to 4 years. Very few seals had been observed from the canoes, and those noticed awake were traveling to the southwest.

In the morning of August 4 the weather was foggy and the wind northwest and moderate. White hunters would not have hesitated about going out in this kind of weather, but the Indians indulged in considerable unnecessary talk and paid no attention to a few scattering sleeping seals that were observed among patches of seaweed. It was only when an occasional glimpse of the sky was seen through the clouds and fog, and indications of good weather were plainly visible, that the Indians showed a disposition to hunt. At 10 o'clock all the boats went out. At the time of lowering two other sealing vessels were in sight. During the absence of the canoes no seals were observed from the vessel, although floating seaweed was plentiful.

The canoes returned early in the afternoon, on account of a heavy fog bank which suddenly shut down. Only 16 seals had been taken, 8 males and 8 females. Their stomachs were entirely empty, which would seem to indicate a scarcity of surface fish in this locality. One of the hunters spoke the schooner *Annie C. Moore*, which reported having taken 65 seals, a comparatively poor catch, considering that the weather had been fairly good.

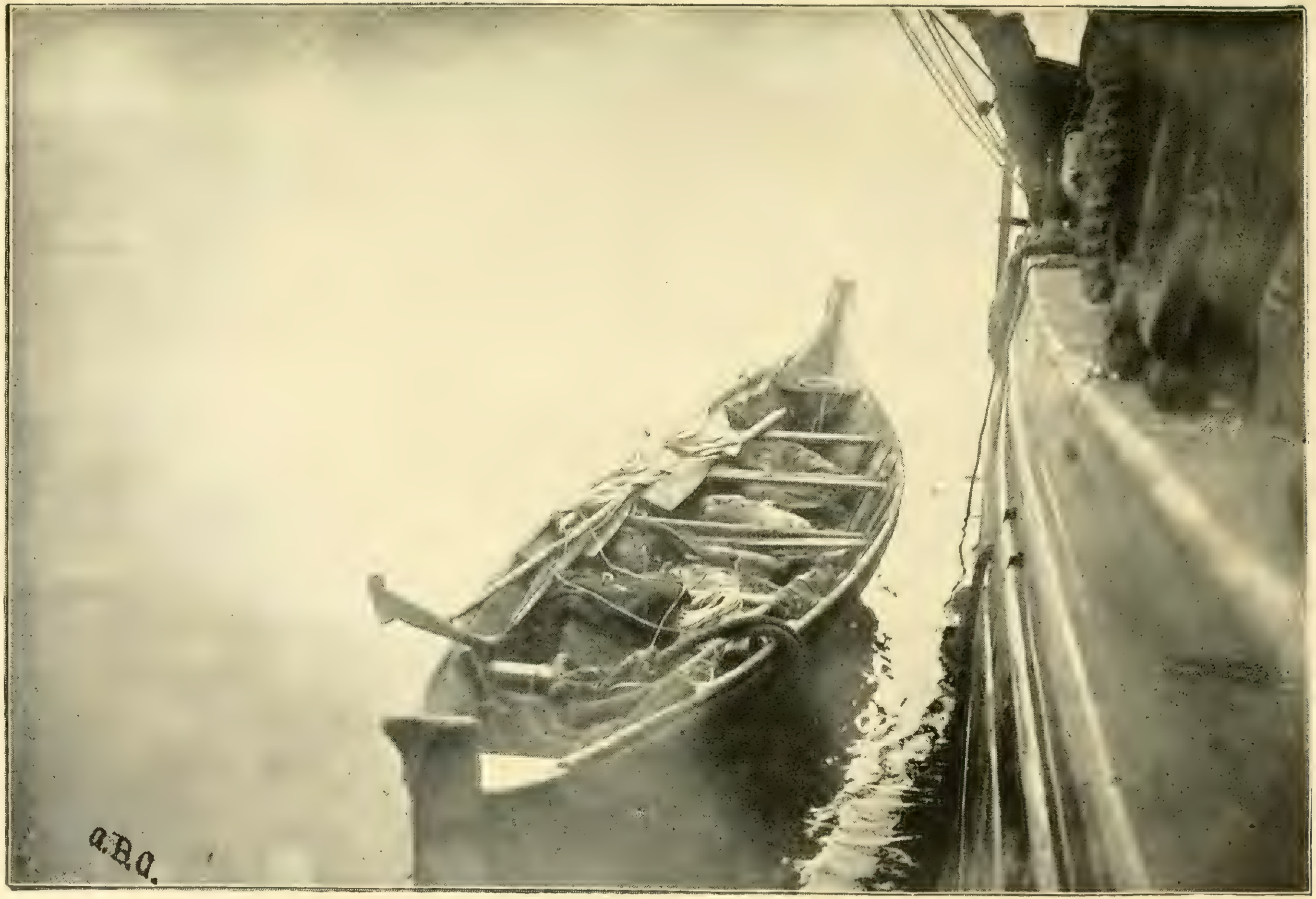
The following day (August 5) the weather was not suitable for sealing, owing to fog and mist most of the time. The wind was from the west-southwest to east-southeast, gradually increasing from a gentle to a fresh breeze, accompanied by a sea sufficiently choppy to prevent seals from sleeping. One "sleeper," however, was observed from the vessel and captured.

On stormy days a lookout is kept by the hunters, and the one who first sees a seal is entitled to stand in the bow of the canoe as spearsman. At such times three men go in a canoe, the weather usually being too rough for one man to manage it. No selection of canoe is made, the most handy one being used, and also the first spear that can be gotten hold of.

In the afternoon we stood to the east-southeast 18 miles, and during the night to the south by west 17 miles, sighting Unalaska Island on the morning of the 6th. The weather was stormy and blowing a moderate gale from southeast, with falling barometer. The noon observation placed us in latitude 55° 01′ north, longitude 168° 07′ west, which showed that we had been in a strong southerly current for the past twenty-four hours. Later in the day we ran 19 miles on a northwest course and hove to on the port tack under a two-reefed foresail and fore-staysail and trysail. In the evening we passed close to the schooner *San Jose*. During the night the wind hauled to the southwest and decreased in force to a very fresh breeze. At times during the following day the sea was very rough, not wholly due to the wind, but caused by a strong current running to the southward. At noon the fog and clouds cleared enough to enable us to get an observation—latitude 54° 56′ north, longitude 167° 27′ west. In the afternoon we stood to the northward at a rate sufficient to offset the effect of the current. Late in the day we spoke the schooner *Walter L. Rich*, which had taken only 65 seals. She had been cruising to the westward of our present position, near the 60-mile zone, and while in that region had seen but few seals.

Toward evening two young seals played about the vessel for some time. They were enticed quite near by whistling, but not close enough to spear. It is only rarely that seals are speared from the deck of a vessel. The young will often approach very near and play about, sometimes for an hour or more, but keeping out of reach. Occasionally, however, their curiosity overcomes their customary prudence, and at such times they are generally captured.

In the morning of August 8 there were indications of clearing weather, with rising barometer and an occasional clear spot in the sky. A dozen



SEALING CANOE WITH OUTFIT AND CATCH, DORA SIEWERD.

or more seals, in bands of three and four, were noticed, causing considerable commotion among the Indians. A week of the sealing season had already passed, and only a few seals had been captured, in consequence of which the Indians were becoming restless. At 8 a. m., wore ship and shook the reef out of the foresail, but in a short time the fog again settled down, and remained so for the remainder of the day.

In the afternoon we saw quite a large number of seals, more than at any time since entering the sea. They were not moving in any particular direction. Orcas or killer whales were plentiful, and kept close to the seals, but they did not have the effect of driving them from the ground. The sealers claim that the orcas destroy large numbers of seals annually, especially in and about the numerous passes through the Aleutian Islands and off the coast of Japan. Many hunters say that when out in their boats it is not an unfrequent occurrence to see orcas devour seals. One hunter on board of the *Seward* informed me that on two occasions, off the Japan coast, orcas attempted to take the seals that he had shot. During the afternoon we saw five other sealing vessels.

On August 9 the canoes were put over for the first time in five days. The white hunters made a start at 9 a. m., the weather having moderated, and being prompted so to do by the sight of a sleeping seal. The Indian hunters held back for a time, but several other seals being observed, the remaining canoes were lowered. During most of the time while the hunters were absent, numerous birds and whales and several porpoises were observed about the vessel. Early in the afternoon the wind began to increase in force and the canoes to return. By 4 o'clock they were all on board, having secured 20 seals, of which 13 were males and 7 females. The stomachs were nearly all empty, a piece of squid being taken from one and a few fish bones from another. One of the females had lost a hind flipper, and shot were found in two of the skins. One of the seals represented by these skins had been recently wounded, the other probably some time early in the spring, the shot being found encysted. All of the females were in milk; the males were all young bachelors.

Two vessels, the *F. M. Smith* and *Saucy Lass*, were in sight at the time the canoes returned. The captain of the former came on board and reported having taken 105 skins. He also said that the schooner *Triumph* had obtained 283; *Maud S.*, 240; *C. D. Rand*, 100, and the *Saucy Lass* between 60 and 70.

On the following morning (August 10) the weather was cloudy and cool. At 7 o'clock the canoes and boats started out; at the time of their going the sea was long and rolling, and the temperature of the water 2 degrees below that of the air. When the air is a great deal colder than the water, experienced hunters do not, as a rule, expect to find many sleeping seals. They state, however, that there are exceptions to this rule, but in most cases extra cold air makes them restless and very difficult to approach within spearing distance; but with shotguns they may, when in this condition, be killed with comparative ease.

In the middle of the forenoon two vessels were sighted. Only one seal was noticed from the vessel. This individual was "mooching," a term used by the hunters to indicate swimming at the surface of the water with only a very small portion of the body exposed, occasionally thrusting the head out far enough to breathe. Seals frequently swim this way on raw, cold days, when they may readily be shot with guns, but are not easily approached with spears.

At 2 p. m. the Indians began to return, much earlier than they should have done, having lost patience and become discouraged. They lack the persistence and judgment of the white hunters, and will give up the chase on the slightest pretext. The latter, on the contrary, will remain out as long as a chance remains of adding another skin to their catch. One hunter, however, had secured 14 seals, the largest catch of any one canoe since entering the sea. The total number of seals in the day's catch was 73, 18 being males, and 55 females. Their stomachs, like those previously examined, contained but little food; only a few pieces of fish and fish bones were found. In one of the canoes 3 female seals had been skinned; of those brought on board 3 were without milk. When asked if the seals skinned in the canoe were in milk, the Indians said they had not noticed. If the condition of the seals had been observed the same answer would have been given, for as soon as these Indians learn that certain information is wanted they are very reticent, and but little dependence can be placed in what they do say. Seemingly they have been taught to look with suspicion on every person in search of sealing data.

The canoes that went to the northwest of the vessel were more successful than those that went in other directions, and the one that brought in the 14 seals hunted about 6 miles to the northwest of all the other canoes in that locality. A great many traveling seals were observed, all bound to the northward. Nearly all information concerning the direction in which seals were traveling was obtained from the white hunters. Indians, as a rule, pay but little attention to traveling seals, generally attempting to capture only those that are asleep, but sometimes they will endeavor to spear them when rolling and finning.

In two of the seals taken shot were found, the wounds being comparatively fresh—not more than a week old.

On August 11 the canoes and boats went out at 5 o'clock, light wind and cloudy weather prevailing all day. In the afternoon sleeping seals, two and three in a bunch, were frequently observed from the vessel. Whales were plentiful from sunrise until dark. The smoke of a revenue cutter could be noticed to the southwest all the morning, the sight of which caused our canoes to hover much nearer the vessel than usual, the Indians having a dread of all Government vessels. At 10 a. m. a canoe belonging to the schooner *Triumph* came alongside with 5 seals. Our canoes began to return at 5.30 p. m. and continued to come in until 7 o'clock, when the last one arrived. The largest catch was 10 skins and one canoe obtained nothing. Sleeping seals were reported in small bunches from 1 to 2 miles apart. The hunters who happened to be near these bunches did fairly well, but a few miles to the southwest only few seals were found. Traveling seals were also plentiful among the bunches. Considering the fine weather prevailing and the number of seals observed from the vessel the catch was comparatively small, only 89 having been taken—10 males and 79 females. Sixty-five of this number were examined. The stomachs in 49 were empty, 13 contained liquid matter, and 7 material which it would be possible to identify; the latter was preserved. A large number of canoes hunting on the same ground tends to destroy the chances of a good catch by any of them. Canoes from other vessels were in close proximity to ours and none of them did well. This day's catch was made 12 miles north and 9 miles west from that of the day before.

On August 12 the hunters made an early start, the weather being cloudy and cool, the wind from the westward and light; sea smooth; temperature of air and water the same. Later in the forenoon a heavy

SKINNING SEALS, DORA SIEWERD.

fog bank threatened to envelop us, and shortly after noon it came in thick, causing all the canoes to return, having obtained only 15 seals.

On August 13 the weather was unsuitable for sealing, being cloudy and threatening; the wind fresh from the southwest and west southwest. In the morning we were in company with the schooners *Triumph* and *Sapphire*, of Victoria, the former having taken 500 skins and the latter 450 skins. Captain Siewerd and the writer went on board of the *Sapphire.* It had been noticed that the water about us was very dark in color, much darker than usual, and it had also been observed that in localities where we had taken the most seals the water had been the most discolored. Captain Siewerd had on more than one occasion noticed that seals frequent water of this character in considerable numbers, and had noted the fact in his log. Captain Cox, of the *Triumph*, stated that when in Bering Sea last year he got most of his catch in this locality, namely, latitude 54° 56′ north, longitude 168° 15′ west. He found seals at the commencement of the voyage in water very much discolored, and he endeavored to keep in such water as much as possible. This experiment resulted in his averaging 126 seals for each time the canoes were lowered during the month of August, 1894. On the strength of meeting with such good success, he has been cruising this season on the same ground, and is now more convinced than ever that seal life is more abundant in discolored water than in clear water. Captain Cox attributed the poor catch of seals on August 11 to the great number of canoes roaming over a comparatively small area. On the day mentioned the *Sapphire* took only 68 seals and the *Triumph* 73. A few days before a large bull seal was captured by the *Sapphire* with two spears embedded in its body.

On the forenoon of the next day (August 14) the weather did not bid fair for sealing, the sea being choppy and the wind fresh from the west-southwest. No seal life was observed until the middle of the day, when one seal was noticed asleep not far from the vessel, and so soundly that the flapping of the canvas did not disturb it. It was captured. Its stomach was empty.

At 12.15 p. m. the weather began to show signs of moderating, and soon afterwards the canoes were lowered in latitude 55° 3′ north, longitude 167° 45′ west, where a number of seals were observed playing. The good weather was of short duration, however, the canoes returning by 3.15 p. m., a heavy fog having settled over the water. The white hunters did not come in until nearly dark, thus showing the difference between the two classes. The fog lifted in about an hour after the Indians returned, but they could not be induced to go out again. In several instances where Indians have become discouraged and wanted to return home they have, in order to accomplish their purpose, broken their spears and smashed their canoes, thereby breaking up the voyage. Previous to about two years ago there was no law in British Columbia regulating the conduct of Indian hunters on sealing vessels, and the result was that every possible advantage was taken of the situation. Under the law recently passed Indians are now held accountable as much as white men for the success of the voyage.

The boats containing the white hunters brought back 4 seals, making the total number for the day 30, of which 14 were males and 16 females. The females were all adults, and with milk; the males were small, from 3 to 4 years old. Only three stomachs contained food. In one young male's stomach was found a number of squid beaks; in the stomach of a female, a piece of squid; and in another, material resembling partly digested crustaceans.

The water through which we had passed was considerably discolored, and the few seals taken were captured where crustaceans were the most abundant. In the evening large flocks of guillemots, petrels, and auks were noticed, apparently feeding. No small fish being noticed, it was supposed that the birds were feeding on minute surface life.

On August 15 the weather was very pleasant, only light airs disturbing the water, and a finer day for sealing could not be desired. By 5 a. m. all the boats had left the vessel, not returning until about the same hour in the evening. A considerable number of sleeping and traveling seals were in sight most of the day. Those that were traveling were not, so far as was observed, going in any one direction. Sometimes a bunch of two or three would suddenly start toward the southeast, swim rapidly for a few minutes, stop, and go in an opposite direction. Frequently four or five would make a complete circle around the vessel at a distance of a quarter of a mile. In a few instances young seals came and played about, diving and swimming, etc.

An abundance of seals was seen from the vessel, but as they occur in bands more or less widely separated, it was not certain that the canoes and small boats would get among them. All through the day whales and birds were numerous and the water was very much discolored, signs now looked upon as favorable indications for a successful day's hunt.

At 4 p. m. the boats began to return and by 6 o'clock they had all arrived except one. The day proved fairly successful, 99 seals having been taken, 31 males and 68 females. Nine was the highest catch and 1 the lowest by a single boat or canoe. They were by far the largest seals yet obtained, only 8 of the females being under 3 years of age. All of the stomachs were examined, but only 10 of the number contained food, some a small amount of liquid matter, and others Alaskan pollock and what appeared to be pieces of cod.

In the evening the wind began to freshen from the east-southeast and later the stars were visible for the first time since we had entered the sea. All through the night the wind was fresh, causing a choppy sea by morning. During this time we had worked 20 miles to the westward. A sharp lookout had been kept for the missing canoe and a torchlight was displayed at frequent intervals.

No boats were lowered during the day, the conditions being unfavorable. The wind did not blow hard at any time, but was strong enough to prevent the seals from sleeping. In the afternoon we spoke the schooner *Louis Olsen*, which had taken 30 seals the day before. At 4 p. m. we attempted to sound in latitude 55° 15′ north, longitude 168° west, but got no bottom, although we were close to the edge of the bank. Just before dark a young seal came alongside and began to play about the vessel, first on one side and then on the other, affording great amusement to the Indians. After a good many wild throws it was captured and proved to be a female.

On August 17 a fairly good day's work was accomplished. Light airs prevailed from southeast and east-southeast, with frequent calms. Light fog and showers occurred several times during the day, but they were not heavy enough to prevent seals from sleeping. Early in the morning a young seal came alongside and was taken. At 6 a. m. all the canoes were lowered; after their departure no seals were seen from the vessel. Early in the afternoon a canoe belonging to the schooner *San Jose* boarded us and reported that vessel as having 530 skins. At 7.30

p. m. our hunters returned bringing 85 seals, 28 males and 57 females. All of the females were exceptionally large; the males were all young bachelors, from 4 to 5 years old. A careful examination was made of the stomachs, only 6 of which contained food. In one stomach was found small pieces of squid, in the others small bones and pieces of fish. The catch to-day was not very evenly distributed among the boats, the highest bringing in 14, and four 1 each.

On August 18 the wind was from the southeast by south to south-southwest, decreasing from a stiff to a gentle breeze. The sea was choppy in the morning, and a long rolling swell prevailed in the afternoon. The weather was foggy and variable, all of which conditions were unfavorable for sealing. At noon there were signs of clearing up, and shortly after that the canoes were lowered in latitude 55° 51′ north, longitude 168° 32′ west. The Indians had no great desire to go out, and probably would not have ventured had it not been that the schooner *Willard Ainsworth* was a short distance away and had already lowered her boats. Five other vessels were also in sight. At the end of three hours the hunters returned, having secured only 2 seals—1 male and 1 female. Very few seals had been seen, the only "sleepers" being the 2 that were captured. The others were traveling in various directions.

The next day, August 19, rain prevented seals from sleeping. At 8 a. m. the canoes were lowered, but the weather did not give promise of satisfactory results, even in case seals were plentiful. The canoes remained out only two hours, returning with 2 males and 2 females. Their stomachs, like those of yesterday, were empty. The mate of our vessel while absent had boarded the schooner *Florence M. Smith*, and learned that she had taken 546 seals. On the 15th she secured 160 seals; her position on that day having been not far from where we hunted—latitude 55° 08′ north, longitude 167° 40′ west. He was also told that our canoe which went astray on the 15th had taken 12 seals, making our total catch for that day 111 skins.

Shortly after the boats returned a sleeping seal was observed close aboard, and although it was raining hard it slept on, wholly unmindful of the weather. Such an occurrence is very unusual, for it is seldom that seals rest well while it is raining, unless they have become thoroughly exhausted by a long spell of rough weather. Later in the afternoon a few traveling seals were seen; they frequently changed their course, but the general direction of their movements was northwesterly. We had been in discolored water all day, but late in the afternoon we suddenly jogged out of it into clear water. The noon observation, latitude 54° 56′ north, longitude 168° west, indicated that we were in a strong south-southwest current.

On August 20 a very satisfactory catch was made, the wind being a light breeze from the westward, and the sea smooth. A light fog hung low over the water at times, occasionally clearing for the space of half to three-quarters of an hour, which enabled the hunters to keep track of the vessel. The boats were lowered at 4.30 a. m., at which time seven other sealing vessels were in sight. During the afternoon we frequently saw canoes lower their sails, indicating that they were among seals. We could not tell to which vessel they belonged, as both boats and vessels were well mixed up together.

One canoe returned early in the afternoon with 11 skins, and by 7 p. m. 111 seals had been landed on deck, 44 being males and 67 females. Sixty-two of the latter were nursing females. All the males were from 4 to 5 years old except 2, which were about 6 years old. Squid and pollock made up the bulk of the food found in their stomachs, a few being gorged with it. In proportion to the number of seals taken, however, only a few contained food. The squid and pollock were in a comparatively fresh state. From the stomach of one male an eelpout was taken.

It is a fact worth mentioning that all the seals taken by us to-day were found in "streaks" of discolored water from 1 to 3 miles wide, and extending nearly in a north and south direction. The character of the water could hardly be accounted for by our close proximity to the bank, for if such had been the case it would have been the same all over. It had previously been noticed that these discolored bands ran parallel to each other in northeast and southwest or northwest and southeast directions. Water in this condition would not ordinarily be noticed from the deck of a steamer unless on the lookout for it. The mate reported seeing an abundance of Alaskan pollock jumping and many traveling seals in pursuit of them.

Most of the seals taken to-day were captured asleep, only four having been awake when speared. The latter were "mooching."

In and about the neck of a male seal were found several shot wounds, with blood oozing from them. Another seal had a bullet hole close to its right forward flipper.

On the morning of August 21 there was every indication of favorable sealing weather. The sky was dark and cloudy, but the wind was light and the sea smooth. The Indians went out at an early hour. Not long after their departure we spoke the schooner *Agnes McDonald*, which had picked up our hunters who went astray on the 15th. The *McDonald* reported having 900 skins. Her white and Indian hunters were equally divided as to numbers, and the former had taken between 40 and 50 more seals than the latter.

The Indians of the Northwest Coast have always been of the opinion that white men could never become expert in the use of the spear, and this spring they ridiculed the idea when told that white hunters were to be employed on a few vessels. If white men will only exercise the same patience when hunting with spears as with shotguns, they will soon become as proficient in its use as the Indians. Such a result would be greatly to the advantage of captains and vessel owners, as the Indians have had the opportunity heretofore of dictating their own terms.

At noon a heavy fog settled down, causing the boats to return; but fairly good results were obtained, 69 seals being taken—12 males and 57 females The males were small, ranging in age from 2 to 4 years. Forty-eight of the females were exceptionally large, 4 medium in size, and 2 about 2 years old. The first mentioned were all with milk, the others without. An examination of their stomachs showed that they had been feeding largely on squid, Alaskan pollock, and salmon, a considerable amount of which could not have been in their stomachs more than a short time, as it was very fresh in appearance.

The mate reported seeing, while hunting, a small school of squid, but observed no seals among them. The other white hunters noticed numerous small fish jumping, and frequently seals in pursuit of them. The fish could not be approached near enough to determine their species.

At the time of lowering the canoes a dead whale was seen to windward, about 1½ miles distant. We kept in sight of it all day. In the evening, after the work of skinning had been finished, a party of Indians went to it and brought back a quantity of blubber. The head had been cut off. Numerous birds were hovering over the carcass and many were feeding on it, but no seals were noticed near at hand.

On August 22 the boats were lowered at an early hour, the weather being similar to that of the day before, with light and gentle winds from the westward. At the time of lowering 4 other vessels were in sight, directly to windward. This, of course, placed our boats in a bad position, as a windward berth is superior to all others. When following in the wake of other boats only poor results are to be expected, as the windward hunters disturb the sleeping seals.

At noon a hunter on the *Agnes McDonald*, who came on board, reported his vessel as having 920 skins, the highest catch for one day having been 253, and the next highest 180. The 253 seals were taken on the 15th, and not far from our position on that date. The hunter informed the writer that on the day before he speared a large male just as it came to the surface with a red rockfish in its mouth. The fish was alive, and as it was not at all mutilated it was taken on board and cooked. He also stated that he speared a sleeping seal close to the floating carcass of a dead one. Indians claim that seals will not remain where carcasses are floating, but this is not always true, for on several occasions we had noticed seals among such objects.

At 4 p. m. a heavy fog set in, putting an end to further hunting for the day. Forty-four seals composed the catch, 12 being males and 32 females. The males were all young bachelors and all the females were in milk except 2. The stomachs of 33 were empty, 11 contained pieces of squid, salmon, pollock, and numerous fish bones.

In the evening we shaped our course to north-northeast, and during the night ran 25 miles in order to get near our position of the 21st. In the morning the weather was unfit for sealing, and as the day advanced the chances grew less favorable.

At 10 a. m. we sounded in 90 fathoms, the first time we had been on soundings since leaving Unalaska. At 4 p. m. our longitude by observation was 168° 05′ west, latitude at noon 55° 28′ north, near where the 69 seals had been taken on the 21st. In the evening we were boarded by officers from the revenue cutter *Rush*.

On August 24 the weather was too variable to entertain hopes of success at hunting. A heavy, wet fog in the morning, combined with a moderate breeze and choppy sea, prevented an early start. At 7.30 a. m. a slight clearing caused the canoes to be lowered. The signal gun was kept firing at short intervals until 10 o'clock, when the fog entirely cleared. The spell of good weather was of short duration, however, for at noon a squall from the north brought all the hunters back. In the short time that the boats were out 21 seals were taken. This was encouraging, for it indicated that we were on good sealing ground. Most of the seals captured were restless, few being sound asleep, or, in sealers' parlance, they did not "lay up" well. The mate came across two seals sleeping side by side, one of which was speared. Instead of the other one becoming alarmed and diving, as is usually the case, it remained near its struggling companion until the latter was hauled into the boat. The food found in the stomachs of the seals to-day did not vary much from that recorded in those previously examined in this locality, namely, squid, squid beaks, salmon, pollock, and fishbones. The males were comparatively large; the females were all adults and with milk.

During the night we stood to the westward 50 miles, and then hove to.

The weather on August 25 prevented sealing, being cold with a fresh breeze from north to north by east, accompanied by a rough sea. The vessel was hove to under sealing canvass. Excellent observations were taken, it being the first time the sun had remained out for any length of time since the cruise began. All day birds had been numerous, and occasionally a sleeping seal was observed; sometimes two and three were seen together. This, combined with the great number of birds, assured us that we were on good ground. We frequently wore ship in order to hold our position. In the evening rain squalls passed over.

On the morning of August 26, the wind and sea having subsided, the canoes were lowered in latitude 55° 15′ north, longitude 170° 53′ west. The weather was pleasant but cool, the air being 2 degrees colder than the water. This difference, according to the theory of many sealers, would cause seals to "lay low," or, to put it in clearer terms, they would sleep with less of their bodies exposed.

In view of the number of seals observed before the boats went out, a large catch was anticipated, nor were we disappointed, for in the evening when the last canoe had returned there were 157 seals on deck.

The opinions advanced to the effect that seals are more plentiful where birds occur seem to be entitled to consideration, and it is very probable that had we not heeded their presence yesterday, and had sailed by them, our catch to-day would not have been large. Our captain had become thoroughly convinced of the value of these signs after years of experience.

The canoes were all back at 6.38 p. m., having been absent over twelve hours. In the forenoon seals were inclined to be restless, but occasional warm rays of sun in the afternoon caused them to sleep soundly. It was noticed that a large portion of to-day's catch was speared either in the breast or back, close to the forward flippers, indicating that the seals slept soundly, with their bodies largely exposed, which gave the hunters an opportunity to strike the most vital part. Aside from the favorable condition of the weather, the absence of other vessels from the ground materially aided in increasing the day's catch.

In only 12 stomachs was food found which could be identified, the others being empty. In the full stomachs were observed squid, pollock, and one piece of salmon. Fifty of the 62 males were 4 to 5 years old, the other 12 about 3 years old. Ninety-two of the females were adults, and 2 under 3 years of age.

All through the night of the 26th and the morning of the 27th the weather was calm, or nearly so. At daybreak a light fog hung over the water; in the middle of the day it cleared away. On the strength of yesterday's success the hunters went out at an early hour. From the vessel scattering seals were observed all through the day. The water was very much discolored, and whales and porpoises were abundant, but there was a marked scarcity of birds as compared with yesterday. At noon a good observation of the sun was taken, which placed us in latitude 55° 10′ north, longitude 170° 47′ west.

At 4 p. m. the hunters began to return, and at 7.30 o'clock the last one had arrived. The catch nearly equaled that of yesterday, amounting to 146 seals, 68 being males and 78 females. It will be seen by this that there are times when the sexes are nearly equally distributed, but as a rule the majority of seals taken at sea are females. Sixty of the 146 seals were opened; food was taken from 6 males and 14 females, consisting of squid, pollock, and a small quantity of fishbones. The stomachs of the females opened contained a greater quantity of food than the males. Thus far, in the examination of stomachs, it had been noticed that those of the males contained much less material than the females.

Most of the males caught to-day were very young, 3 and 4 years old;

the females were much larger. Seventy-four of the latter were in milk; those that were not were from 2 to 3 years old.

On the morning of August 28 the weather looked favorable for a repetition of the previous day's work. The hunters were well clear of the vessel at 5.30 o'clock, at which time another vessel and the smoke of a steamer could be seen low on the horizon. In the middle of the day a canoe belonging to the schooner *James G. Swan* came alongside and reported that vessel as having 860 skins. During the latter part of the day the weather became threatening. The barometer had been falling rapidly since noon, the wind had shifted from southwest to southeast, and no seals had been observed from the vessel. At 6 p. m. the hunters returned, bringing 57 seals. Two of the males were large, the others were all small.

As soon as the canoes and boats were hoisted in and secured for the night, a single reef was put in the foresail and a reefed trysail set, and preparations made for stormy weather. At dark the wind began to increase in force, and by midnight it was blowing a moderate gale, which continued until the following noon. Occasional heavy rain squalls passed over, which kept the sea down somewhat. In the evening two sleeping seals were noticed, which was unusual under the circumstances.

In the morning of August 30 the wind had again increased to a moderate gale, and since midnight had changed 2 points to the southward. The sea was very rough; weather clear and sunny.

At 10 a. m. wore ship and lay to on the starboard under close-reefed sails. Both in the forenoon and afternoon we saw scattering seals. They were seemingly not bound in any particular direction, and most of them were playing. One was observed asleep.

We had been in comparatively clear water all day, but late in the afternoon suddenly jogged into discolored water. At 5.30 p. m. the jib was set, and we stood on a southeast by south course, so as to give the 60-mile limit a wide berth, the wind and sea for the past twenty-four hours having carried us toward it. We worked to the south and west all night. In the morning of August 31 the wind and sea had gone down considerably, and one vessel was in sight. At noon we were in latitude 55° 11′ north; longitude 170° 05′ west. We spoke the schooner *Enterprise*, of Victoria, with 1,387 skins on board. She reported the schooner *Libbie*, with 1,040 skins, and the *Carlotta Cox*, with 600. The last-named vessel carried only 6 boats, and white hunters, which speaks well in their favor as seal hunters with spears.

Shortly after meridian we passed several sleeping seals, but the condition of the weather prevented the hunters from going out. About two hours later several more were seen, and at 4 p. m. we came across a bunch of "sleepers." At this time the weather showed signs of clearing, and 7 canoes were lowered, but they were out only a short time when the weather again became threatening. Eleven seals was the result of this short trial, 5 being males and 6 females. They were all very small and only one contained food. Four of the females were without milk.

Through the day we had been in markedly discolored water, and the other indications were favorable to the presence of a considerable body of seals on this ground, which turned out to be the fact, as proved by the results of the hunting on the following day.

The wind had been moderate all through the night, and in the morning of September 1 a light air was moving from the southwest, the sea being smooth. The sky was cloudy and the air cool, but as the day advanced it grew warmer. Whales could be heard blowing through the night, and at daylight a number were seen close by; also immense flocks of birds. At 5.30 a. m. the hunters started under very favorable conditions, the sea being smooth and nothing in the atmosphere indicative of a change. The wind being very light, the vessel remained in one position most of the day. Numerous seals were observed, both awake and asleep. The former were moving only slowly, seldom going over 100 yards, and spending most of the time in finning, rolling, and scratching themselves. In the afternoon we were boarded by the revenue cutter *Rush*. At 5.30 p. m. the canoes began to return, each one bringing a good catch, the largest amounting to 25 seals, the smallest to 11. The total catch was 336. This was a phenomenal day's work, affording the greatest number of seals ever taken in Bering Sea in one day, except that the schooner *Sapphire* in 1894 captured about 400 in the same length of time.

There were 120 males and 216 females. The stomachs of those opened showed a remarkable scarcity of food. The material from 8 males and 10 females was all that was in suitable condition to identify, and consisted chiefly of squid, although pollock and what looked like cod made up a portion of the food preserved. Taking into consideration the amount of surface life observed from day to day, it has appeared remarkable that so few seals should have food in their stomachs.

To-day both Indian and white hunters reported numerous seals, finning, rolling, and asleep. In the early part of the day they were inclined to be restless, but in the afternoon the warm sun caused them to sleep soundly, and so plentiful were they that sometimes it was a hard matter to decide which one to spear first. Of course, where seals sleep so near together, those in close proximity to the one speared are liable to be disturbed, but there were enough others in the near vicinity to keep the hunters busy without paying much attention to the disturbed ones. They were reported as lying about like logs, as far as the eye could reach. The hunters claimed that in all their experience they had never before beheld anything like the sight presented. Small schools of squid, pollock, and other fish were plentiful. One of the white hunters reported seeing several Atka mackerel, and from the description given it is possible he was correct. The day had been a perfect one for sealing, and no other vessels were on the ground.

During the night we jogged to the southwest 14 miles. In the morning of September 2 the hunters were out at an early hour, weather being clear and pleasant, the sea smooth, and the wind light from northeast by north. At 10 a. m. two of the canoes returned, the hunters claiming that the air was too raw and chilly for seals to sleep well, there being 2 degrees difference between the air and water. Only a few scattering seals had been seen, and they were rolling and finning. It was not long before all the canoes returned, bringing altogether 10 seals—6 males and 4 females. Three of the latter were nursing females. Their stomachs were comparatively empty, what little food they contained being of the same character as on the previous day, namely, squid.

At 4 p. m. an observation of the sun placed us in latitude 55° 22′ north, longitude 170° 36′ west. At this time we saw several patches of sea weed in which seals were finning and playing. We spoke the schooner *Enterprise* and learned that she had captured 236 seals on the 1st, about 12 miles south of our position. We were also informed that a number of other vessels had been very successful, which would indicate that the seals covered a considerable area on that day and were not wholly confined to our immediate vicinity.

September 3 was cold and cloudy, the wind being northeast and fresh, the sea short and choppy. A few "mooching" and finning seals were occasionally seen; no travelers were observed. At 5 p. m. we spoke the schooner *Ainoko*, which had taken 750 skins. For the past week she had been cruising in the vicinity of Akutan Pass, but had not found seals abundant enough to remain on that ground. Last season good catches were made there. She was now bound to the westward in search of a large body of seals which had been reported a few days previous by the revenue cutter *Grant*.

We continued to jog to the northward for about 20 miles and then hove to. All the afternoon scattering seals had been observed, most of them in our wake. They would follow the vessel for a half hour at a time, seemingly through curiosity. At times during the night seals could be heard playing around us. In the morning several bunches were noticed close by, a few playing, but the majority going in a northwesterly direction. In the early part of the day the barometer began to fall, the weather became threatening, with the wind east and sea rough. At 10 a. m. wore ship and jogged to the southeast under snug canvas, wind a moderate gale from the east-northeast. From daylight until dark more seal life had been observed from the vessel than at any previous time since entering Bering Sea. Our attention was especially attracted to the character of the water, which had the appearance of being filled with minute surface life. Birds were numerous, and an occasional whale was in sight.

During the next three days stormy weather prevailed, the wind being east-northeast and blowing from a moderate to a strong gale; the sea was heavy most of the time. On the morning of the 7th the wind had subsided to a moderate breeze. During this long spell of boisterous weather seals were frequently observed, some playing and others traveling in a southwesterly direction. Birds were plentiful most of the time. At noon on the 7th we were in latitude 56° 22′ north, longitude 171° 50′ west, and it was quite evident that we had encountered a strong northwesterly current. At 8 p. m. wore ship and stood to the southeast so as to give the 60 mile zone a wide berth. A vessel cruising near this line without getting an observation for several days, and having no means of knowing the direction of the current, is very apt to be from 30 to 40 miles out in her reckoning.

At 6 a. m. on September 8 the hunters were making preparations to lower, the sea being smooth and a light breeze blowing from the eastward; the weather was cloudy. At 10 a. m. the hunt was interrupted by a heavy, damp fog. Ten seals had been obtained—7 males and 3 females. Five of the former were between 4 and 5 years old; the other 2 were very small, about 1 year old; the females were all nursing cows. The stomachs of these seals were nearly all empty. Only a few of the hunters saw seals, and according to appearances there were but few in this locality. Two of the boats rowed and sailed fully 15 miles each without encountering a single one. Fish and other surface life were correspondingly scarce. As our position—latitude 56° 35′ north, longitude 172° 20′ west—placed us very near the bank, the scarcity of seals was surprising.

While a number of the canoes were waiting alongside to be hoisted on board a small seal came up in our wake, apparently attracted by the blasts of the fog horn and remaining unconscious of danger until one of the canoes had closely approached it and the spear had been poised for striking. It was captured.

At 3 p. m. we made all sail and stood to the southeast. Shortly after this the fog lifted for a short time and an observation of the sun was taken, placing us in latitude 56° 32′ north, longitude 172° 45′ west.

The next morning we had made 50 miles in a southeast direction; the weather was pleasant, the sea smooth, and the sky periodically clear. A few seals were noticed early in the day. At 9 a. m. the presence of 3 seals, supposed to be sleeping, prompted two hunters to launch their canoes, but they dived just as the spears were being thrown. The appearance of seals, however, acted as an incentive for all the canoes to go out, but they soon returned in consequence of fog. Nine seals only were obtained, 4 being males and 5 females. Although fish were reported jumping, nothing was found in the stomachs of these specimens.

In the night we had worked to the east-southeast, and in the morning we were in latitude 55° 50′ north, longitude 171° 49′ west. At 5 a. m. a sleeping seal was speared close to the vessel; its stomach was well filled with food, consisting apparently of Alaskan pollock. At this hour the weather was very foggy and the Indians were not inclined to start. Presently, however, the fog lifted somewhat and several more seals were seen. A signal gun could now be heard, indicating that a sealing vessel was near and that her boats were out. This circumstance stimulated the hunters to action, and in a short time the canoes were hoisted out. As the fog cleared birds, whales, and porpoises could be seen to the northwest, and also flocks of petrel on the water close by. The season being now well advanced, the hunters were expected to take advantage of every opportunity, and, moreover, on the strength of their previous good success, they were quite eager to add a few more skins to the number on board. The weather could no longer be trusted for any length of time, and that proved to be the case on this day. At 11 a. m. the fog became so dense that the captain was as anxious to get the hunters back as they were to return. Seventeen seals composed the catch, 5 being males and 12 females. Eleven of the females were nursing cows, and the males were all young. One canoe obtained 5 of the number, all of which were asleep and separated just far enough so the noise made in capturing one did not disturb the others. A considerable number of "rollers" and "finners" was noticed, but the damp fog seemed to prevent them from sleeping. Had the day been warm it is probable that a good catch would have been secured.

In proportion to the number of seals taken, a greater amount of food was found in their stomachs than on any previous occasion. Squid and pollock mixed with crustaceans composed the greater part of the material identified. Squid beaks were very conspicuous in every stomach in which food was found. As in previous cases the stomachs of the females were much better filled than those of the males.

The second mate while out hunting had boarded the schooner *Triumph*, whose gun had been heard earlier in the day. She reported having 1,800 skins. The day before she took 20 skins 30 miles to the eastward of our present position. For the past few days she had been gradually working to the westward, but only a few scattered seals had been noticed. To-day her hunters brought in 42 skins. Captain Cox expressed the opinion that if good weather should prevail for a few days encouraging results would follow, as there was every indication that seals were plentiful on this ground. The elements were against us, however, and for the next four days the weather was rough and boisterous.

On September 11 the wind blew a very fresh breeze, varying in direction from south by east to southwest, accompanied by a rough sea. No seals were seen, but many birds were about. During the

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night of the 11th and the morning of the 12th the wind increased in force and hauled to the westward. The sky was filled with heavy clouds, the air was raw and chilly. Occasionally we wore ship to hold our position. Scattering petrels and other sea birds were frequently seen, but only one seal was sighted during the day. At sundown the barometer began to rise. In the evening the sky cleared and the stars came out, but the sea continued heavy and was accompanied by a flying scud.

On September 13 the wind varied in force from a light to a stiff breeze, with changeable weather, rain, mist, fog, and rough sea, occasionally clearing. Birds were plentiful, one of which was seen to dive close to the vessel and bring up a fish about 10 inches long. In the afternoon 3 seals were observed sleeping side by side, the vessel almost running over them before they awoke. They must have been much exhausted from loss of sleep in the recent gale.

In the morning of September 14 the wind had again increased to a moderate gale. The weather was foggy and misty at times, with a heavy, rough, and tumbling sea. Two seals were observed in the forenoon. Near noon we ran into an area of discolored water, in latitude 55° 20′ north, longitude 171° 25′ west, in which were a number of seals. Notwithstanding the very rough condition of the sea and the moderate gale prevailing, several of them were asleep. Their bodies were but little exposed, and it was only when we were quite near them that they could be made out. The gale finally broke, and in the morning of September 15 only a light, variable air was moving. The sea had also gradually gone down with the wind. At 7.30 a. m. several seals were observed and the canoes were lowered. Two sleepers were captured a short distance from the vessel. At 11 a m., however, a heavy fog and mist settled down, accompanied by a cold wind from the northwest, which had the effect of bringing back the hunters, all of whom were on board at 1.30 o'clock, having captured 24 seals, 16 males and 8 females. Pieces of squid were found in the stomachs of some of them. Fourteen of the males were very small, and 2 between 4 and 5 years old. The females were larger, 5 being with milk. The hunters reported seeing a large number of seals rolling and finning.

Numerous birds and a great many whales were in sight all day. At noon we were in latitude 55° 10′ north, longitude 170° 06′ west, which was not far from the position where we had taken 157 seals on August 26 and 146 on August 27. The color of the water varied but little on these dates, the strips of discoloration also running in the same general direction. It would appear as though these bands of discolored water were governed chiefly by the currents, being but little affected by the wind. Late in the day the fog gave way to occasional rain squalls. Birds were exceedingly abundant, and we frequently sighted scattered seals, the most of which were playing. In the evening several hail squalls passed over, after which the sky cleared.

Preparations were made to lower the canoes on the following morning, but the work was interrupted by the sudden breezing up of the wind from the westward. In the afternoon the clear weather suddenly changed to mist and rain, with an occasional squall. Only 2 seals were seen, 1 asleep and the other playing. A canoe was lowered for the "sleeper," but it was lost sight of in the choppy sea. Whales and birds were plentiful all day, and in some places immense flocks of petrel were sitting on the water. They were evidently feeding on small marine organisms, for as soon as we had jogged past they would settle down in the same spot from where they had been frightened.

Early in the evening a sealing vessel passed to windward with her flag set, indicating that she was homeward bound. The sight of this vessel put the Indians in high glee, for the season was now getting late and they were anxious to go home.

On September 17 the weather was a repetition of that of the previous day. In the early part of the day we saw 9 seals circling around in various directions and occasionally rolling and finning. Observing this number of seals from the vessel with a choppy sea running was a good indication that under better conditions they would be found plentiful. At noon the weather showed signs of moderating, but the Indians could not be induced to venture out on account of a few squally looking clouds low on the horizon. At 2 p. m. two white hunters started out, but after a two hours' hunt they returned empty-handed. Only 4 seals had been seen, 3 finning and 1 asleep. At the time the boat left the vessel the water was comparatively clear, but about 3 miles to the northwest it came into very much discolored water, in which birds were plentiful and a few fish were seen jumping.

Early in the following morning, September 18, the canoes were lowered, the wind being light from the southeast and the sea smooth. The barometer indicated no change, but in a short time the wind began to increase. No seals were observed either by the small boats or from the vessel during the day.

On September 19 the weather was similar to that of the previous day. Four seals were seen, 2 asleep, the others traveling to the north-northeast. The former did not awake until the swash of the water from our bow struck them. In the evening we headed for Unimak Pass. As the season was now late it was thought inadvisable to remain longer in the sea. The condition for the last ten days had convinced the captain that little, if any, more sealing weather could be expected.

The next morning we sighted the schooner *San Jose*, which had made a catch of 600 skins. Her captain came on board and reported that until recently he had been hunting northwest of the Pribilof Islands. In that region seals were abundant, but the weather had been too stormy to operate. On September 13, in latitude 58° 30′ north, longitude 172° 30′ west, several hundred seals had been observed, but the sea was too rough for lowering the boats. In the latter part of August the *San Jose* had hunted near Unimak Pass, but few seals were found there.

At 10 a. m., the wind being light, 8 of the canoes were put over, but at 2 p. m. a dense fog settled down. Ten seals were secured, 4 males and 6 females. They were all small, and their stomachs were empty. On this ground birds were plentiful and one orca was observed. At 2.45 p. m. we continued on our course, and at 6 p. m. Cape Cheerful bore abeam about 15 miles. The next day we were off the northern entrance of Unimak Pass, four other sealers being in sight. In the evening we cleared the southern entrance of the Pass and shaped a course for Cape Flattery. On the morning of October 8 we anchored off Ucleuet, an Indian village situated on the north side of Barclay Sound, Vancouver Island, where most of our Indians belonged. We reached Victoria on October 8, having been twenty days on the passage home.

OBSERVING SEALS.

In sealing weather hunters do not wait until seals have been seen from the vessel before lowering the boats. They start out as early as possible and search for them, as otherwise the catch of the entire fleet would be small. Very often when no seals are observed from the vessel's deck the boats will be among bunches of them, only a mile or two away, and, on the other hand, it sometimes happens that when scattered seals are

CANADIAN SEALING SCHOONER DORA SIEWERD UNDER STORM CANVAS, SHOWING MANNER OF STOWING CANOES.

noticed from the deck the boats may be cruising over barren ground. As a rule, however, the number observed from the vessel is small as compared with the number sighted from the boats. A vessel while jogging will naturally frighten a great many which lie in her path; the flapping of the canvas and the creaking and slatting of the booms arouse the sleepers long before they can be seen, and give them ample time to escape. In the early days of pelagic sealing the boats used to be stationed at different distances and in different directions from the vessel, and would drift, waiting for seals to come near. This method, however, proving unremunerative, it was given up, and the hunters began to cruise, which custom they have continued to follow ever since.

MANNER OF COUNTING THE SEXES.

Considerable controversy has arisen from the accounts rendered by sealing captains regarding the proportion of male and female seals taken in the North Pacific Ocean and Bering Sea. Previous to the time when sealing vessels were required to enter the number of each sex taken in their official logs little thought was given to this question, and it was always claimed that the two sexes occurred in about equal numbers. All sealers knew which sex predominated, but clung to their original story, and there was no one who could controvert their assertions, although there was every reason to doubt them. An order from the United States Treasury Department requiring the catch of all American sealers to be examined on their arrival in port was the means of throwing considerable light on the subject, and the information gained from this source fully established the fact of the great preponderance of females.

It has generally been supposed by most sealers, and the view is still entertained by many, that if it were known that a greater number of females than males were taken it would greatly affect and possibly restrict their privileges when the time came for a readjustment of pelagic regulations. The fact has generally been lost sight of that the condition of the rookeries at the end of five years will have the most weight in deciding that matter.

That pelagic sealers should pay little attention to the sexes of the seals taken was but natural, as they had no object in determining which sex predominated, the thought uppermost in their minds being to capture as many seals as possible.

No check is placed upon the official logs of the Canadian sealers by the custom-house officials at Victoria, who accept such records as authentic. If the skins landed at Victoria were subjected to the same rigid examination as those landed in United States ports, little or no difference would be found in the proportion of each sex represented in the catch by the vessels of the two countries. It seems strange that on several occasions when American and Canadian sealers have hunted on the same ground and in close proximity to each other, the catch of the former has always been composed largely of females and the latter of males. There are days when more males than females are taken, but such times are not frequent. It is only fair, however, to state that a number of both American and Canadian sealing captains have admitted the truth to the writer, and all United States hunters with whom he has conversed admit that the majority of seals captured off Japan and around the Commander Islands are females.

During the season of 1894 the schooner *Louis Olsen* kept an account of the seals taken off the coast of Japan, and it was found that out of 1,600 two-thirds were females. In 1895 the schooner *Brenda* obtained

896 seals on the same coast, fully two-thirds of which were also females, according to the statement of one of her hunters. In nearly every instance where the writer has spoken with hunters on this subject they have admitted that in all waters where the northern seal herd is found, with one exception, females largely predominate. This exception is the Fairweather ground, where, a few years previous to the beginning of the close season now in force, most of the pelagic sealing was carried on during the month of May. On this ground, as recorded by the writer in a previous report, is found a great number of large males, and according to the statement of all sealers and of others it is now quite well established that large breeding males frequent this ground in greater numbers than any other known region.

It may be well to illustrate briefly a few of the conditions under which the record of seals is kept. When seals are brought on board in small numbers it is very easy to identify the sex, but when they arrive in large quantities, a hundred or more, it requires considerable time to examine each one, and sealers have, to them, more important duties to attend to. It often happens that the hunters are forced to return on account of bad weather or an approaching storm, at which times the safety of the canoes and vessel is of more consequence than the determination of the character of the catch. When the boats and canoes are being hoisted in, the officers and men are stationed at either side of the vessel to do this work, as well as to keep the records, and, as is to be expected, in the bustle and excitement a very correct account of the sexes is not given. In many cases the seals are not examined at all. By the time the last canoe is lashed on board the weather is rough and stormy and the hunters are anxious to go below; and if it be dark the seals will be left until morning for skinning. No further examination is made, and, right or wrong, the first account rendered is accepted. The fact of the matter is, that in only a few cases is the sex correctly recorded.

Inaccuracies in this respect also result when the seals are skinned in the boats. Upon arrival at the vessel the skins are at once thrown into the hold without examination, and nobody knows or cares whether they are male or female.

Although United States revenue cutters have the privilege of boarding vessels and overhauling the catch made in Bering Sea, the conditions under which this work is carried on, however zealous the officers may be, render it difficult for the sexes to be separated, and they return to their ship little wiser than when they came.

CONDITIONS OF THE FEMALE SEALS TAKEN BY THE DORA SIEWERD.

Of the 982 female seals secured by this vessel, 882 were opened and examined by the writer. Of this number 839 were found to be adults, and 668 were clearly in milk. Many of the remaining 171 may also have been nursing females, which at the time of their capture had not obtained sufficient nourishment to cause their milk glands to fill.

SEALS MADE SHY BY HUNTING.

Inquiry was made of several captains and hunters as to whether seals were as easy to capture this year as last in Bering Sea. They all give it as their judgment that seals were more difficult to approachth is season than in 1894. Captain Cox, of the schooner *Sapphire*, said he had noticed a marked difference in that respect, and attributed it to the hunting that had been carried on. In many cases they appeared to be unusually shy when there was no apparent cause for it.

FOOD OF SEALS.

The material which has been found in the stomachs of seals taken in different parts of Bering Sea indicates that only a small percentage is composed of fish which inhabit deep water. It is only reasonable to suppose, however, that when seals are in shallow water they feed both on bottom fish and on those swimming near the surface. A not uncommon component of their food is the red rockfish, which occurs both in deep and shallow water and possibly also near the surface at times, which would account for its being found in the stomachs of seals captured where the water is 100 fathoms or more deep.

On August 22, 1895, in latitude 55° 04′ north, longitude 168° 35′ west, the head of a macrurus was found in the stomach of a male seal. This group of fishes inhabits considerable depths and much speculation arose as to how it had been obtained by the seal. It was subsequently learned, however, that the *Albatross* had been dredging in deep water near our position from the 18th to the 22d, and during that time there had been thrown overboard many rejected specimens, among which were a number of macruri, which would be apt to float for some time at or near the surface if not molested.

It has been claimed that seals will not eat dead fish, but this is a mistake, for the writer has seen them devour salmon that had been dead several days.

Surface fishes, and especially squid, seem to be the natural food of the seal. In the stomachs that have been examined a variety of material was found, such as pieces of Alaskan pollock, salmon, and other fishes, but it has also been observed that in localities where squid are plentiful very little other food may be looked for. I am informed by hunters that on the coast of Japan and off the Commander Islands squid occur in great abundance, and that it is not an uncommon sight to see a half dozen or more seals together feeding on the tentacles of octopus floating at the surface. Sealers usually find squid plentiful off the island of Kadiak, and in that locality they have often been found in large quantities in the stomachs of the seals.

WHITE HUNTERS AT A DISADVANTAGE.

The white hunters on the *Dora Siewerd* did not have the same opportunity of getting seals as the Indians for several reasons, one of which was that, as a rule, they were the last to leave the vessel in the morning and the first to return at night. They were expected to hoist out all the canoes, and in the evening to hoist them in again, stow them away and lash them. Indians are useless in this kind of work, and upon their arrival alongside, their duties have ended, as the skinning of the seals devolves upon the steersmen.

The Indians, therefore, had every advantage in respect to hunting. On leaving a vessel the boats nearly always form a line so that each will have a clear space to windward. When all the boats start out together they are all on an equal footing; but when one or two boats, as was the case with our white hunters, are obliged to follow in the rear of others, their chance of seeing many seals is greatly lessened, for they are hunting in water already passed over, but the situation improves as the boats become more widely separated. Sometimes, also, a sudden change of wind favors the last boats to go out and places them to windward, a coveted position which they could not otherwise have secured, a windward position being always considered the best. In perfectly calm weather one position is as good as another.

Record of the position of the vessel and of the catch of fur seals each day by the sealing schooner Dora Siewerd during a cruise in Bering Sea in August and September, 1895, showing also the number of each sex taken daily as entered in the official log of the vessel.

Date.	Latitude.	Longitude.	Males.	Females.	Total.
1895.	N.	W.			
Aug. 1	54 28	167 08	36	6	42
2	54 41	167 51	26	19	45
3	54 43	167 00	7	6	13
4	54 37	167 20	8	8	16
9	54 42	167 43	14	6	20
10	54 58	167 31	18	55	73
11	55 10	167 40	29	60	89
12	55 02	167 48	6	9	15
14	55 03	167 45	14	16	30
15	55 08	167 40	48	51	99
15	....	....	(*a*)	(*a*)	12
17	55 15	168 30	38	47	85
18	55 21	168 32	1	1	2
19	54 56	168 00	2	2	4
20	55 15	168 15	44	67	111
21	55 28	168 05	26	43	69
22	55 06	168 38	20	24	44
24	55 26	168 30	10	11	21
26	55 15	171 55	74	83	157
27	55 08	171 45	68	78	146
28	55 06	170 43	28	29	57
31	55 02	170 10	5	6	11
Sept. 1	55 28	170 26	191	145	336
2	55 25	170 50	6	4	10
8	56 32	172 50	7	3	10
9	55 51	171 56	4	5	9
10	55 55	171 45	5	12	17
15	55 18	170 06	16	8	24
20	54 36	167 33	5	5	10
Total	....	....	756	809	1,577

a On August 15 a canoe went astray, but afterwards returned, bringing in 12 skins, of which the sexes were not determined.

Record of the catch of fur seals and of the number of each sex taken daily by the sealing schooner Dora Siewerd during a cruise in Bering Sea in August and September, 1895, as determined by A. B. Alexander.

Date.	Males.	Females.	Total.	Date.	Males.	Females.	Total.
1895.				1895.			
Aug. 1	34	8	42	Aug. 22	12	32	44
2	26	19	45	24	10	11	21
3	6	7	13	26	62	95	157
4	8	8	16	27	68	78	146
9	13	7	20	28	14	43	57
10	18	55	73	31	5	6	11
11	10	79	89	Sept. 1	120	216	336
12	3	12	15	2	6	4	10
14	14	16	30	8	7	3	10
15	31	68	99	9	4	5	9
15	(*a*)	(*a*)	12	10	5	12	17
17	28	57	85	15	16	8	24
18	1	1	2	20	4	6	10
19	2	2	4				
20	44	67	111	Total	583	982	1,577
21	12	57	69				

a On August 15 twelve skins were taken, of which the sexes were not determined.

Approximate ages of the seals and the number of nursing females taken during the cruise of the sealing schooner Dora Siewerd in Bering Sea in August and September, 1895, based upon examinations made by A. B. Alexander.

Date.	Males.		Females.		Number of nursing females.	Number not examined.
	Number taken.	Age.	Number taken.	Age. *a*		
1895.		*Years.*		*Years.*		
Aug. 1	3	5	5	ad.	5	
	21	3	3	2		
	10	2				
2	18	3	17	ad.	17	
	8	2	2	2		
3	6	3 to 5	6	ad.	6	
			1	2		
4	5	4	4	ad.	4	
	3	5	4	2		
9	12	4	7	ad.	6	
	1	5				
10	1	6	55	ad.	47	
	8	4				
	9	3				
11	10	3 to 5	70	ad.	50	24
			9	2		
12	2	4	9	ad.	9	
	1	5	3	2		
14	12	3	16	ad	16	
	2	4				
15	27	5	60	ad.	58	
	4	4	8	2		
16			1	ad.		
17	20	4	57	ad.	35	
	8	5				
18	1	3	1	ad.	1	
19	2	4	2	ad.	2	
20	35	4	67	ad.	62	
	9	5				
21	5	4	54	ad.	48	
	4	3	3	2		
	3	2				
22	12	4	28	ad.	28	
			4	2		
24	10	5	11	ad.	11	
26	50	4 to 5	92	ad.	65	72
	12	3	3	2		
27	65	3 to 4	78	ad.	74	60
	3	4 to 5				
28	14	3 to 5	43	ad.	37	
31	5	3 to 5	6	ad.	4	
Sept. 1	119	3 to 4	216	ad.	80	156
	1	5				
2	6	4 to 5	4	ad.	3	
8	5	4 to 5	3	ad.	3	
	2	1				
9	4	2 to 3	3	ad.	3	
			2	1 to 2		
10	5	2 to 4	11	ad.	11	
			1	1		
15	14	2 to 3	8	ad.	3	
	2	4 to 5				
20	3	3	6	ad.		
	1	5				

a All females above 2 years old are classed as adults, "ad."

Record of physical observations made during the cruise of the sealing schooner Dora Siewerd in Bering Sea, August and September, 1895, by A. B. Alexander.

Date.	Time of day.	Temperature.		Wind.		Barometer reading.	Noon position.	
		Air.	Surface water. [a]	Direction.	Force.		Latitude.	Longitude.
1895.		°	°		Miles.		N.	W.
Aug. 1	8 a. m	51	47	ENE.	3	29.90		
	10 a. m	49	47	NE.	2			
	12 m	48	47	NE. by E.	2	29.92	54 25	167 04
	4 p. m	47	47	NE.	2	29.90		
	8 p. m					29.90		
2	7 a. m	47	45	NNW.	2			
	8 a. m	48	45	NNW.	2	29.90		
	10 a. m	48	46	NNW.	3		54 51	167 52
	12 m	48	46	NW. by W.	3	29.90		
	2 p. m	48	46	NNW.	3			
	4 p. m	48	46	W.	4	29.90		
	6 p. m	47	46	NW.	4			
	8 p. m					29.92		
3	7 a. m	47	47	NW. by N.	3			
	8 a. m	47	47	NW. by N.	3	29.92		
	10 a. m	47	47	NW. by N.	3			
	12 m	47	47	NW.	4	30.00	54 43	167 00
	2 p. m	48	47	NW.	4			
	4 p. m	47	46	NW.	4	30.00		
	6 p. m	45	46	NNW.	5			
	8 p. m	44	46	NNW.	4	30.10		
4	8 a. m	45	43	NW. by W.	4	30.14		
	10 a. m	45	44	WNW.	3			
	12 m	46	46	W.	3	30.20	54 37	167 25
	2 p. m	45	46	W.	3			
	4 p. m	44	46	W. by S.	3	30.20		
	6 p. m	44	46	W.	2			
	8 p. m					30.10		
5	8 a. m	45	46	W. by S.	3	30.10		
	10 a. m	45	45	S. by E.	4			
	12 m	45	45	SSE.	4	30.10	55 01	168 07
	4 p. m	46	47	S. by E.	5	30.08		
	8 p. m	45	44	S.	4	30.00		
6	8 a. m	45	46	SE.	8	29.76		
	10 a. m	45	46	SE.	8			
	12 m	45	46	S. by E.	7	29.65	54 45	167 50
	4 p. m	46	46	S.	7	29.64		
	8 p. m	46	46	S. by W.	8	29.50		
7	8 a. m	46	43	SW.	7	29.60		
	12 m	46	43	SSW.	6	29.71	54 56	167 27
	2 p. m	46	44	SW.	5			
	4 p. m	46	45	SW.	5	29.74		
	8 p. m	46	44	SW.	6	29.74		
8	8 a. m	45	45	WSW.	6	29.78		
	10 a. m	46	45	W.	6			
	12 m	46	45	W.	6	29.78	55 01	167 30
	4 p. m	45	46	SW. by W.	6	29.80		
	6 p. m	45	46	SW. by W.	6			
	8 p. m	44	46	SW.	6	29.82		
9	8 a. m	47	45	WSW.	4	29 96		
	10 a. m	47	44	WSW.	3			
	12 m	48	44	W. by S.	3	29.98	54 42	167 45
	2 p. m	47	44	W. by N.	4			
	4 p. m	45	44	W. by N.	5	29.98		
	8 p. m	45	44	W. by N.	4	30.00		
10	7 a. m	43	46	W. by N.	3			
	8 a. m	45	46	W. by N.	3	30.20		
	10 a. m	45	46	W. by S.	3			
	12 m	44	47	W.	3	30.20	54 58	167 31
	2 p. m	45	47	SW. by W.	3			
	4 p. m	45	47	SW. by W.	2	30.20		
	6 p. m	45	47	SW. by W.	2			
	8 p. m					30.20		
11	8 a. m	46	46	Var.	1	30.12		
	10 a. m	46	46	WNW.	1			
	12 m	47	47	Var.	1	30.10	55 00	167 45
	2 p. m	47	47	Var.	1			
	4 p. m	46	46	N.	2	30.00		
	8 p. m	45	46	NE.	2	29.98		
12	8 a. m	46	46	WNW.	3	30.00		
	10 a. m	47	47	W. by N.	3			
	12 m	47	47	W.	3	30.00	55 06	167 50
	2 p. m	47	46	W. by N	3			
	4 p. m	47	46	W. by N.	2	30.12		
	6 p. m	46	46	W. by N.	3			
	8 p. m					30.20		

[a] The temperature of the water was taken 5 feet below the surface.

Record of physical observations made during the cruise of the sealing schooner Dora Siewerd in Bering Sea, August and September, 1895, by A. B. Alexander—Continued.

Date.	Time of day.	Temperature.		Wind.		Barometer reading.	Noon position.	
		Air.	Surface water. *a*	Direction.	Force.		Latitude.	Longitude.
1895.		°	°		*Miles.*		N.	W.
Aug. 13	8 a. m	48	45	SW. by W.	5	30. 20	54 56	168 15
	2 p. m	45	45	WSW.	5	30. 20		
14	8 a. m	46	44	WSW.	5	30. 28		
	10 a. m	46	45	WSW.	5			
	12 m	48	45	SW.	4	30. 30	55 03	167 45
	2 p. m	47	45	WSW.	4			
	4 p. m	46	45	WSW.	3	30. 30		
	8 p. m	46	45	WSW.	3	30. 30		
15	8 a. m	46	44	W.	1	30. 32		
	10 a. m	48	45	Var.	1			
	12 m	49	45	Var.	1	30. 32	55 08	167 40
	2 p. m	49	45	Var.	1			
	4 p. m	47	45	SE.	1	30. 00		
	6 p. m	46	45	ESE.	2			
	8 p. m					30. 28		
16	8 a. m	48	44	SSE.	6	30. 00		
	12 m	47	44	SSE.	4	30. 00	55 07	168 10
	2 p. m	46	44	SSE.	3			
	4 p. m	46	46	SSE.	3	29. 96		
	8 p. m					29. 96		
17	8 a. m	47	45	ESE.	1	29. 98		
	10 a. m	48	45	Calm.	0			
	12 m	48	46	SE.	1	30. 00	55 15	168 30
	2 p. m	49	46	SE.	1			
	4 p. m	49	46	Calm.	0	29. 98		
	8 p. m	47	46	SSE.	2	29. 94		
18	8 a. m	49	45	SE. by S.	5	29. 78		
	10 a. m	49	45	SE. by S.	5			
	12 m	49	45	SSE.	4	29. 72	55 21	168 [illegible]2
	2 p. m	49	45	S. by W.	3			
	4 p. m	49	45	SSW.	3	29. 65		
	6 p. m	49	45	SW. by S.	3			
	8 p. m					29. 65		
19	8 a. m	46	46	SW. by W.	3	29. 72		
	10 a. m	47	47	SW. by W.	4			
	12 m	46	47	SW.	4	29. 72	54 56	168 00
	2 p. m	46	46	SW.	3			
	4 p. m	46	45	SW.	3	29. 70		
	6 p. m	46	45	SW.	3			
	8 p. m	46	45	SW. by S.	3	29. 70		
20	8 a. m	46	46	W.	2	29. 62		
	10 a. m	48	47	W.	2			
	12 m	48	47	WNW.	2	29. 68	55 14	168 15
	2 p. m	48	47	WNW.	2			
	4 p. m	48	47	WNW.	2	29. 78		
	8 p. m	47	47	WNW.	2	29. 78		
21	8 a. m	46	46	NW. by W.	2	29. 90		
	10 a. m	48	47	WNW.	2			
	12 m	47	46	WNW.	2	29. 92	55 29	168 05
	2 p. m	47	47	WNW.	3			
	4 p. m	47	47	WNW.	3	29. 91		
	6 p. m	47	47	WNW.	3			
	8 p. m	47	47	WNW.	3	29. 91		
22	8 a. m	47	47	W. by N.	3	30. 10		
	10 a. m	48	47	NW. by W.	2			
	12 m	49	48	WSW.	2	30. 08	55 04	168 35
	2 p. m	48	47	WSW.	2			
	4 p. m	46	47	WSW.	2	30. 08		
	6 p. m	47	47	WSW.	3			
	8 p. m					30. 10		
23	8 a. m	47	46	S. by W.	3	30. 00		
	10 a. m	46	46	SSW.	4			
	12 m	47	47	SSW.	4	30. 00	55 28	168 10
	2 p. m	47	47	S. by W.	4			
	4 p. m	46	47	SSW.	5	29. 98		
	6 p. m	46	47	SSW.	5			
	8 p. m	46	47	S. by W.	5	29. 98		
24	8 a. m	47	46	SW.	1	30. 00		
	10 a. m	47	46	NNE.	1			
	12 m	47	47	N.	4	30. 10	55 27	168 30
	2 p. m	47	47	N.	5			
	4 p. m	47	47	N.	5	30. 10		
	6 p. m	45	47	NNE.	5			
	8 p. m					30. 10		
25	8 a. m	48	47	N. by E.	7	30. 20		
	10 a. m	48	47	N. by E.	7			
	12 m	48	47	N. $\frac{1}{2}$ E.	6	30. 20	55 15	170 38

a The temperature of the water was taken 5 feet below the surface.

Record of physical observations made during the cruise of the sealing schooner Dora Siewerd in Bering Sea, August and September, 1895, by A. B. Alexander—**Continued.**

Date.	Time of day.	Temperature.		Wind.		Barometer reading.	Noon position.	
		Air.	Surface water.*a*	Direction.	Force.		Latitude.	Longitude.
1895.		°	°		*Miles.*		N.	W.
Aug. 25	2 p. m	47	47	N.	6			
	4 p. m	47	47	N.	6	30. 20		
	8 p. m	47	47	N.	6	30. 18		
26	8 a. m	45	47	N.	2	30. 08		
	10 a. m	45	47	NW. by N.	2			
	12 m	46	47	WNW.	1	30. 00	55 15	170 53
	2 p. m	45	47	WSW.	2			
	4 p. m	46	47	WSW.	2	29. 98		
	6 p. m	45	47	WSW.	2			
	8 p. m					29. 95		
27	8 a. m	45	47	WNW.	1	29. 92		
	10 a. m	46	47	SW.	1			
	12 m	48	48	W. by S.	1	29. 90	55 10	170 47
	2 p. m	49	48	W.	2			
	4 p. m	46	49	W. by N.	2	29. 90		
	6 p. m	44	49	NNE.	2			
	8 p. m					29. 98		
28	8 a. m	44	48	W. by S.	2	29. 82		
	10 a. m	46	48	SW. by S.	3			
	12 m	46	48	SW.	3	29. 90	55 07	170 45
	2 p. m	46	48	S. by W.	3			
	4 p. m	46	48	S. by E.	3	29. 76		
	6 p. m	45	48	SE.	3			
	8 p. m					29. 70		
29	8 a. m	47	47	SE.	8	29. 40		
	10 a. m	47	47	SE.	8			
	12 m	48	47	S. by E.	8	29. 40	55 28	170 15
	2 p. m	48	47	S.	7			
	4 p. m	48	47	S. by W.	6	29. 50		
	6 p. m	48	47	S. by W.	6	29. 52		
	8 p. m							
30	8 a. m	48	47	SW. by S.	8	29. 80		
	10 a. m	48	47	SW. by S.	8			
	12 m	48	47	SW. by S.	8	29. 85	55 25	170 10
	2 p. m	48	47	SW. by S.	8			
	4 p. m	48	47	SW. by S.	8	29. 90		
	8 p. m	48	47	SW. by S.		29. 94		
31	8 a. m	48	47	SW.	4	30. 40		
	10 a. m	48	47	SW.	4			
	12 m	48	47	SW. by W.	4	30. 50	55 11	170 05
	2 p. m	48	47	SW.	4			
	4 p. m	48	47	SW. by W.	3	30. 52		
	6 p. m	48	47	SW. by W.	3			
	8 p. m					30. 60		
Sept. 1	8 a. m	45	47	SW.	1	30. 60		
	10 a. m	46	47	Var.	1			
	12 m	46	47	Var.	1	30. 58	55 29	170 26
	2 p. m	49	47	Var.	1			
	4 p. m	45	47	Var.	1	30. 58		
	6 p. m	45	47	NW.	1			
	8 p. m					30. 60		
2	8 a. m	45	47	NE. by N.	3	30. 60		
	10 a. m	47	47	NE. by N.	4			
	12 m	46	47	NE. by N.	4	30. 60	55 25	170 50
	2 p. m	45	47	NE.	4			
	4 p. m	45	47	NE.	4	30. 58		
	6 p. m	44	47	NE.	4			
	8 p. m					30. 56		
3	8 a. m	45	47	NE.	5	30. 40		
	10 a. m	45	47	NE. by E.	5			
	12 m	46	47	NE.	5	30. 40	55 29	170 36
	2 p. m	46	47	NE. by E.	6			
	4 p. m	45	47	NE. by E.	6	30. 40		
	6 p. m	45	47	NE. by E.	6			
	8 p. m			NE. by E.	6	30. 40		
4	8 a. m	45	46	E.	7	30. 20		
	10 a. m	45	46	ENE.	8			
	12 m	46	47	ENE.	8	30. 15	55 55	170 50
	2 p. m	46	47	ENE.	8			
	4 p. m	46	47	ENE.	8	30. 14		
	6 p. m	46	47	ENE.	8			
	8 p. m			ENE.	8	30. 12		
5	8 a. m	46		ENE.	8	30. 00		
	10 a. m	46		ENE.	8			
	12 m	46		ENE.	8	29. 98	55 22	170 15
	2 p. m	46		ENE.	8			
	4 p. m	46		ENE.	8	29. 95		

a The temperature of the water was taken 5 feet below the surface.

Record of physical observations made during the cruise of the sealing schooner Dora Siewerd in Bering Sea, August and September, 1895, by A. B. Alexander—Continued.

Date.	Time of day.	Temperature.		Wind.		Barometer reading.	Noon position.	
		Air.	Surface water. *a*	Direction.	Force.		Latitude.	Longitude.
1895.		°	°		*Miles.*		N.	W.
Sept. 5	8 p. m			ENE.	8	29.96		
6	8 a. m	46		NE. by E.	9	30.00		
	10 a. m	47		NE. by E.	8			
	12 m	47		NE. by E.	8	30.10	56 10	170 45
	2 p. m	47		NE. by E.	8			
	4 p. m	47		NE. by E.	8	30.10		
	6 p. m	47		NE. by E.	8			
	8 p. m			NE. by E.	8	30.20		
7	8 a. m	47	46	E. by N.	4	30.30		
	10 a. m	47	46	E. by N.	4			
	12 m	47	45	E.	4	30.31	56 22	171 50
	2 p. m	46	45	E.	3			
	4 p. m	46	45	E.	3	30.32		
	6 p. m	46	45	E.	3			
	8 p. m			E.	3	30.38		
8	8 a. m	46	46	E. by S.	2	30.40		
	10 a. m	48	46	E.	3			
	12 m	45	46	E.	3	30.40	56 35	172 20
	2 p. m	45	46	E.	3			
	4 p. m	44	45	E.	3	30.40		
	6 p. m	44	45	E.	3			
	8 p. m			E.	3	30.40		
9	8 a. m	47	47	E. by N.	4	30.18		
	10 a. m	47	47	E. by N.	4			
	12 m	47	47	E. by N.	4	30.10	55 49	171 54
	2 p. m	47	47	E. by N.	3			
	4 p. m	47	47	SE.	3	30.02		
	6 p. m	46	47	SE.	2			
	8 p. m			SE.	2	30.00		
10	8 a. m	47	46	ESE.	3	29.90		
	10 a. m	47	47	ESE.	3			
	12 m	47	47	E.	3	29.80	55 50	171 49
	2 p. m	48	47	E. by S.	3			
	4 p. m	47	47	ESE.	3	29.60		
	6 p. m	47	47	SE. by E.	4			
	8 p. m			SE. by E.	4	29.55		
11	8 a. m	46	47	S. by E.	7	29.40		
	10 a. m	47	47	S. by W.	7			
	12 m	47	47	S. by W.	7	29.38	55 57	171 30
	2 p. m	47	47	S	7	29.35		
	4 p. m	47	47	S.	7	29.35		
	6 p. m	46	47	S.	7			
	8 p. m			S.	7	29.32		
12	8 a. m	45		SW.	8	29.40		
	10 a. m	46		SW. by W.	8			
	12 m	46		WSW.	9	29.55	55 44	171 30
	2 p. m	46		WSW.	9			
	4 p. m	45		WSW.	8	29.65		
	6 p. m	45		WSW.	8			
	8 p. m			WSW.	8	29.72		
13	8 a. m	44	44	W. by S.	4	29.90		
	10 a. m	46	44	SW. by W.	5			
	12 m	46	45	W. by S.	4	29.90	55 44	171 51
	2 p. m	46	46	W.	3			
	4 p. m	46	46	W.	2	29.90		
	6 p. m	46	46	SW. by S.	3			
	8 p. m					29.98		
14	8 a. m	47	45	SSW.	8	29.68		
	10 a. m	47	45	SSW.	8			
	12 m	47	45	SSW.	8	29.62	55 20	171 25
	2 p. m	47	45	SSW.	8			
	4 p. m	46	45	SW. by S.	8	29.65		
	6 p. m	46	45	SW. by S.	8			
	8 p. m					29.65		
15	8 a. m	44	45	Var.	1	29.60		
	10 a. m	45	45	NW.	3			
	12 m	45	45	NW.	3	29.60	55 10	170 06
	2 p. m	44	45	NW.	4			
	4 p. m	43	45	NNW.	5	29.78		
	6 p. m	42	45	NNW.	5			
	8 p. m					29.80		
16	8 a. m	44	46	W.	5	30.00		
	10 a. m	46	46	W.	5			
	12 m	46	46	W.	5	30.02	55 20	170 32
	2 p. m	42	46	W. by S.	4			
	4 p. m	42	46	SW.	4	30.00		
	6 p. m	42	46	SSW.	5			

a The temperature of the water was taken 5 feet below the surface.

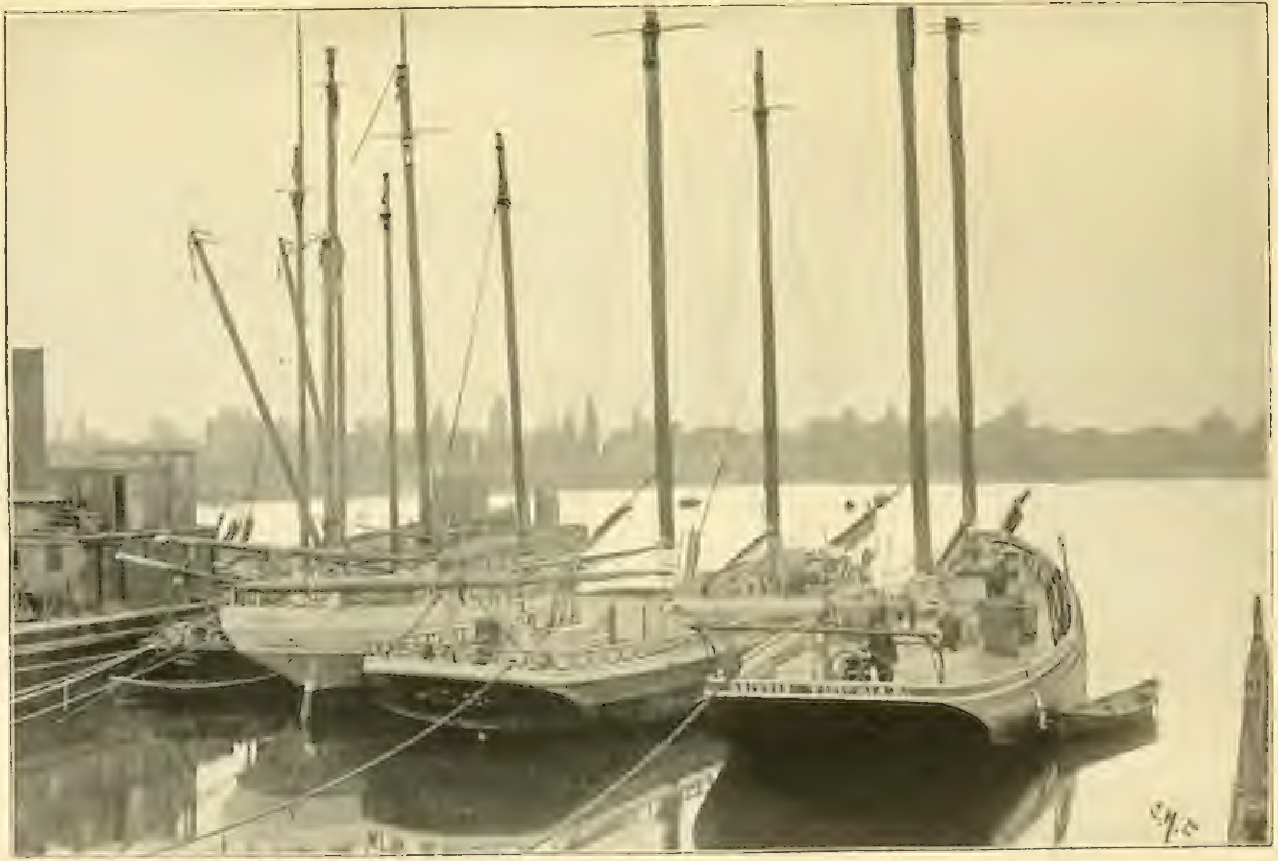
Record of physical observations made during the cruise of the sealing schooner Dora Siewerd in Bering Sea, August and September, 1895, by A. B. Alexander—Continued.

Date.	Time of day.	Temperature.		Wind.		Barometer reading.	Noon position.	
		Air.	Surface water. *a*	Direction.	Force.		Latitude.	Longitude.
1895.		°	°		*Miles.*		N.	W.
Sept. 16	8 p. m	...	...	...	...	29.98	...	...
17	8 a. m	41	45	W.	4	30.40	...	...
	10 a. m	42	45	W.	4	...	...	...
	12 m	44	45	WN.W.	5	30.45	55 17	170 36
	2 p. m	44	45	W.	3	...	...	...
	4 p. m	44	45	W.	3	30.50	...	...
	6 p. m	43	45	W.	1	...	...	...
	8 p. m	...	...	...	...	30.58	...	...
18	8 a. m	44	45	SE.	5	30.48	...	...
	10 a. m	44	45	SE.	5	...	...	...
	12 m	45	45	SE.	5	30.40	55 30	169 55
	4 p. m	45	46	SE.	5	30.32	...	...
	6 p. m	45	46	SE. by S.	5	...	...	...
	8 p. m	...	...	...	5	30.25	...	...
19	8 a. m	46	45	N. E.	5	29.82	...	...
	10 a. m	47	46	NE. by N.	5	...	...	...
	12 m	47	46	NE. by N.	5	29.74	55 28	170 40
	2 p. m	47	46	NE. by N.	5	...	...	...
	4 p. m	47	46	NNE.	5	29.72	...	...
	6 p. m	46	45	N. by E.	5	...	...	...
	8 p. m	...	...	N. by E.	5	29.70	...	...
20	8 a. m	45	45	NE. by N.	3	29.70	...	...
	10 a. m	45	45	NE. by N.	2	...	...	...
	12 m	44	45	Var.	1	29.70	55 36	167 30
	2 p. m	43	45	SE.	2	...	...	...
	4 p. m	43	45	SE.	4	29.70	...	...
	6 p. m	43	45	SE. by S.	4	29.70	...	...

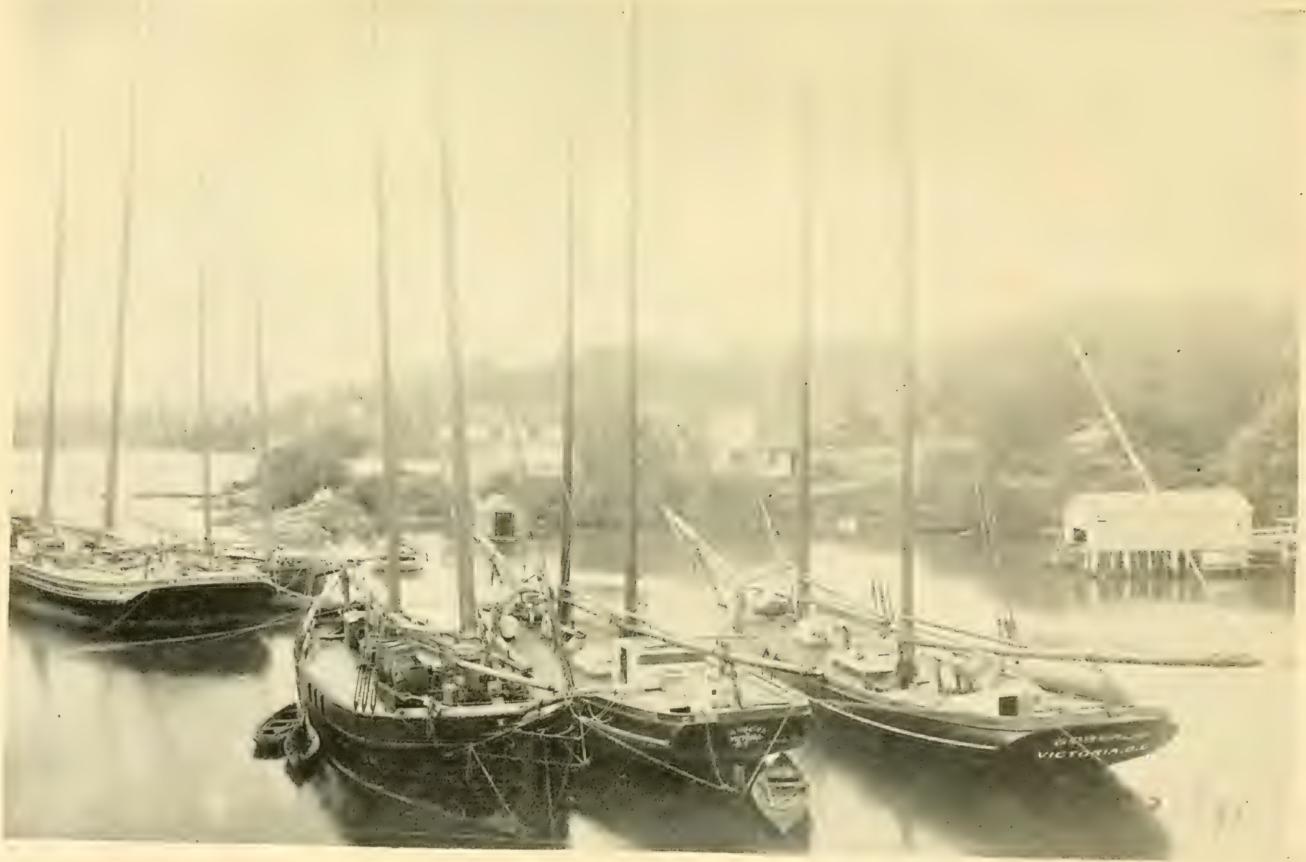
a The temperature of the water was taken 5 feet below the surface.

Record showing the principal food found in the stomachs of seals taken in Bering Sea by the schooner Dora Siewerd.

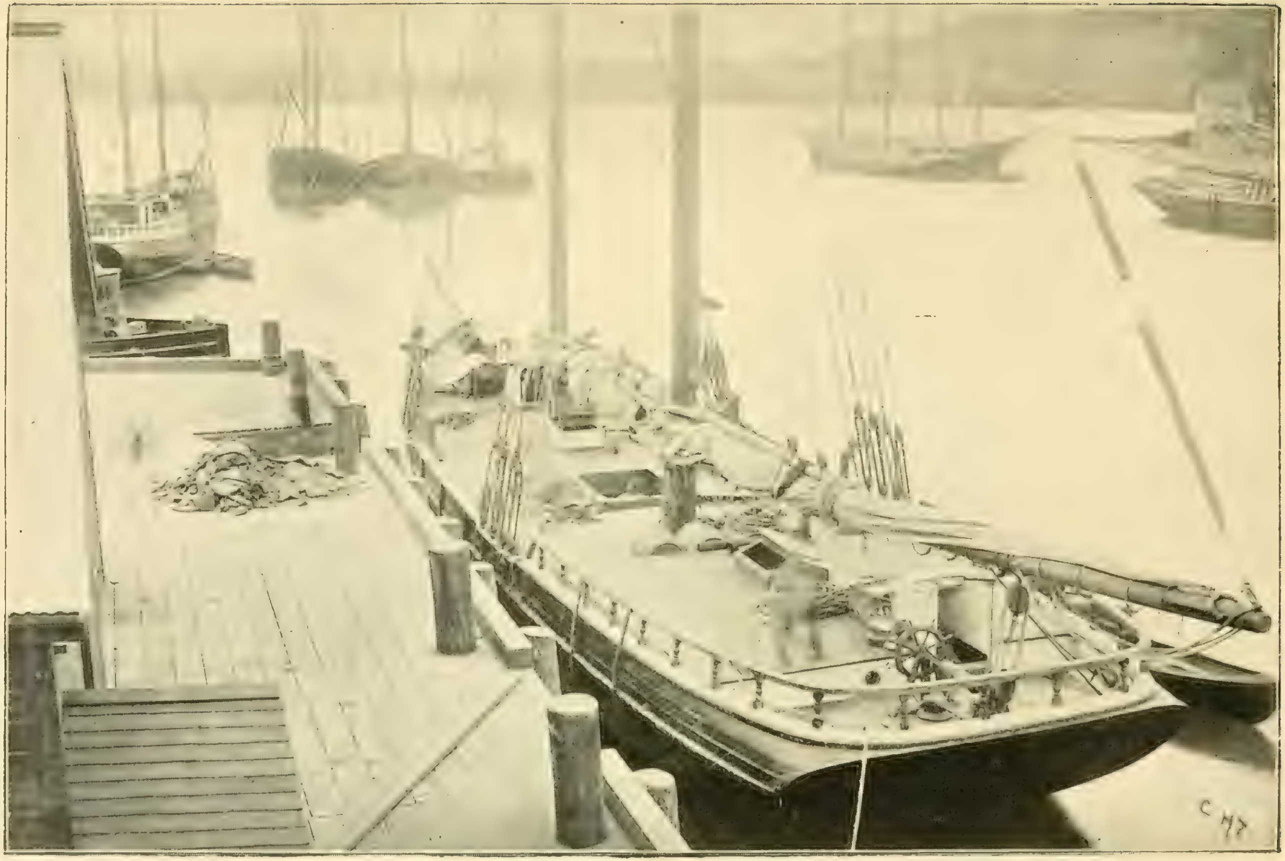
Date.	Number of seals taken.	Principal food found in the stomach.
1895.		
Aug. 1	42	Nearly all empty; a few could not be identified.
2	45	Do.
3	13	Empty.
4	16	Do.
9	20	A piece of squid and fish bones.
10	73	Pieces of fish and fish bones.
11	89	Do.
12	15	Do.
14	30	Pieces of squid and squid beaks.
15	99	Alaskan pollock and pieces of fish.
17	85	Squid, pieces of fish, and fish bones.
18	2	Empty.
19	4	Do.
20	111	Squid, squid beaks, fish bones, pollock, and other fish.
21	69	Squid, pollock, and salmon.
22	44	Squid, pollock, salmon, and fish bones.
24	21	Squid, squid beaks, salmon, pollock, fish bones.
26	157	Squid, pollock, and pieces of salmon.
27	146	Squid, pollock, and fish bones.
28	57	Do.
31	11	Pollock.
Sept. 1	336	Mostly squid and what looked like cod.
2	10	A few pieces of squid.
8	10	Pollock.
9	9	Empty.
10	17	Squid, squid beaks, mingled with crustacea.
15	24	Squid.
20	10	Empty.



TYPES OF SEALING SCHOONERS, VICTORIA HARBOR, 1894.

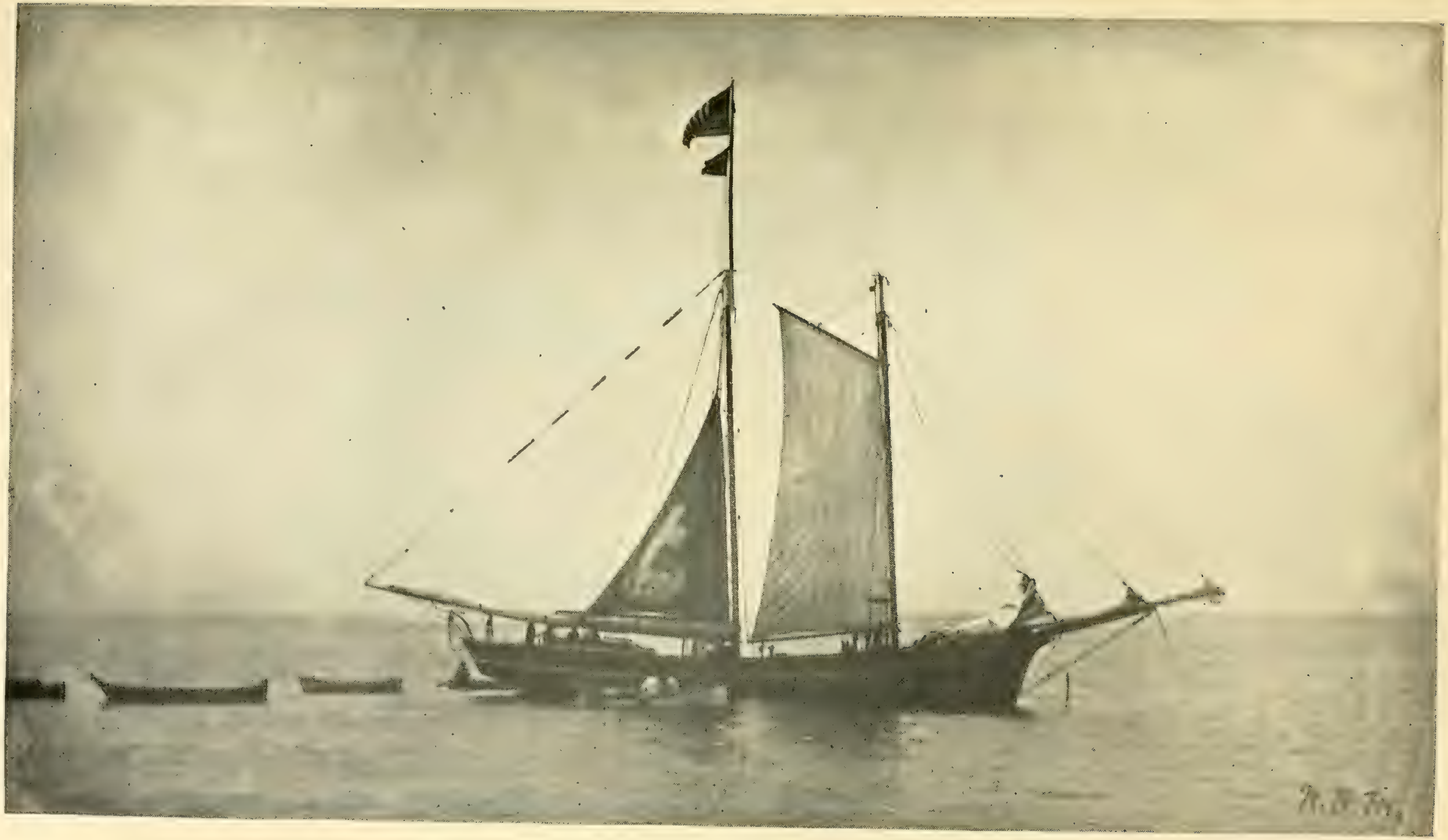


TYPES OF SEALING SCHOONERS, VICTORIA HARBOR, 1894.

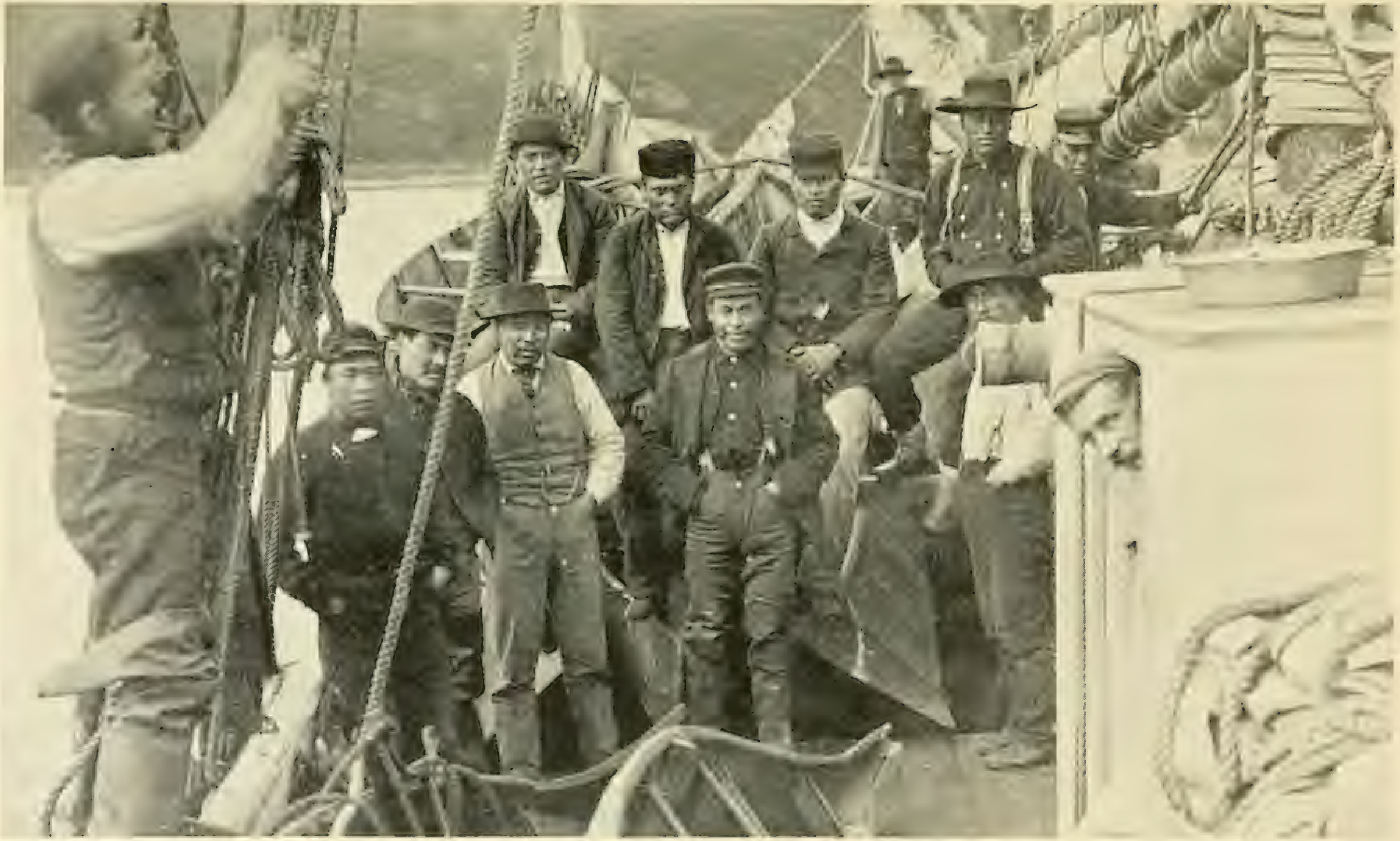


CANADIAN SEALING SCHOONER AINOKO.
(Discharging skins at Victoria.)

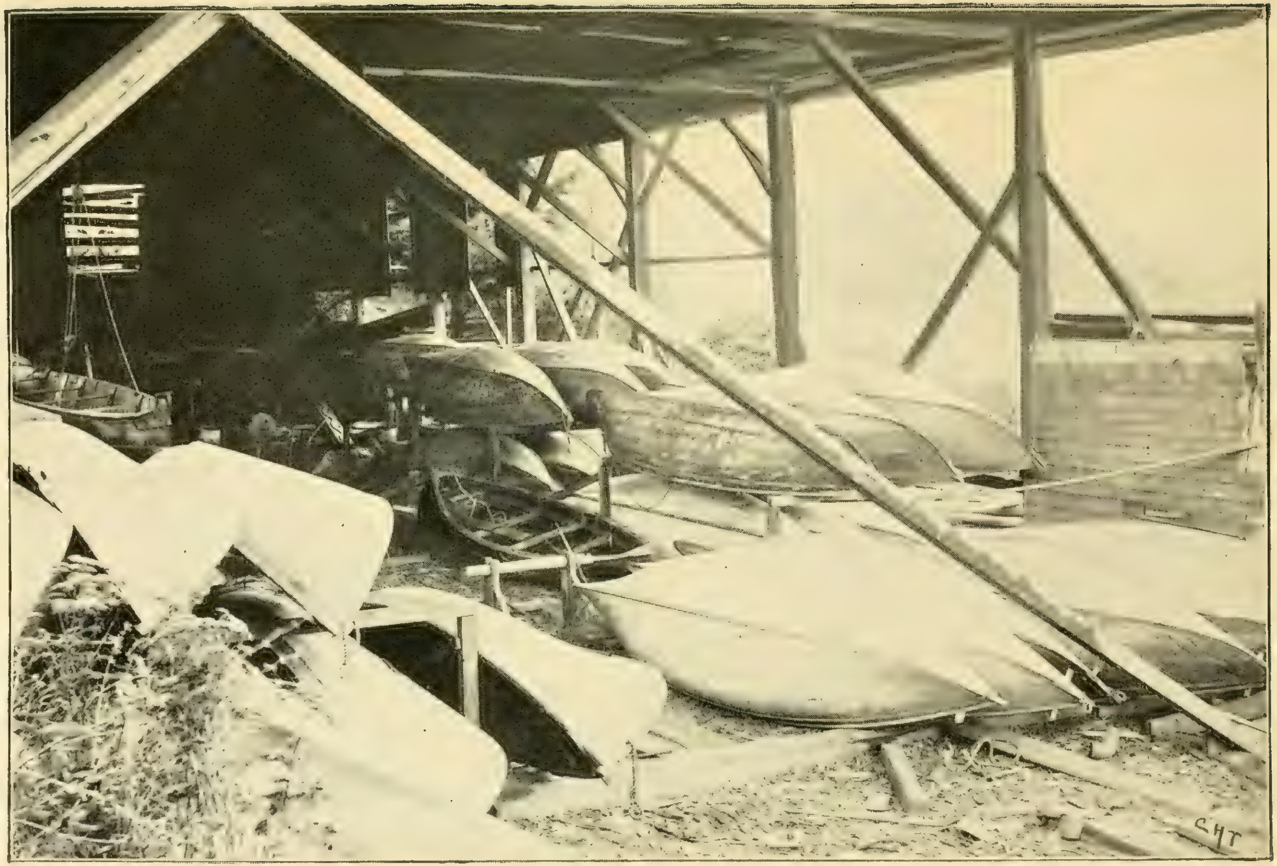
CANADIAN SEALING SCHOONER ANNIE E. PAINT, BERING SEA.



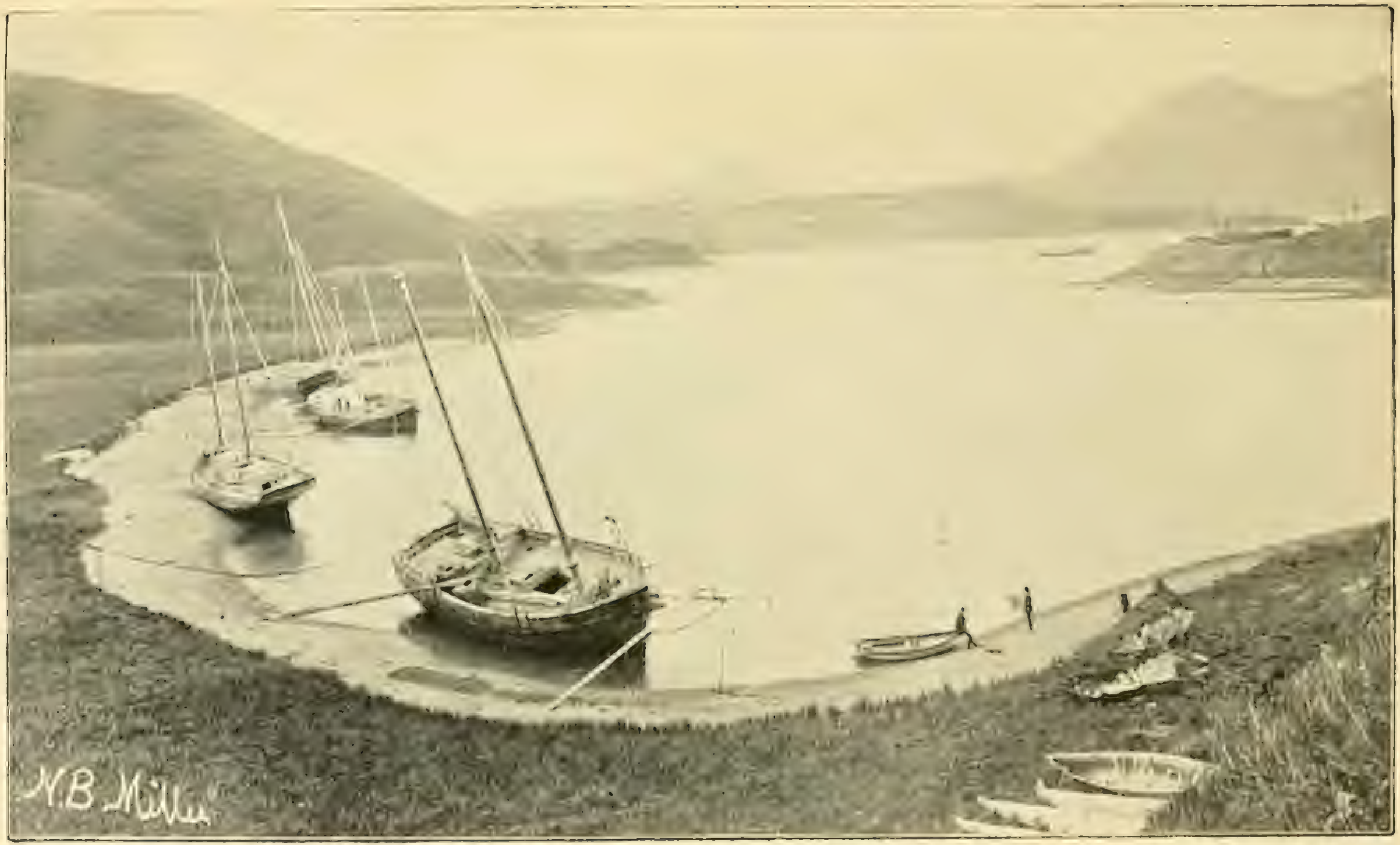
AMERICAN SEALING SCHOONER COLUMBIA, WITH CANOES, BERING SEA.



PORTION OF INDIAN CREW OF CANADIAN SEALING SCHOONER FAVORITE, 1894

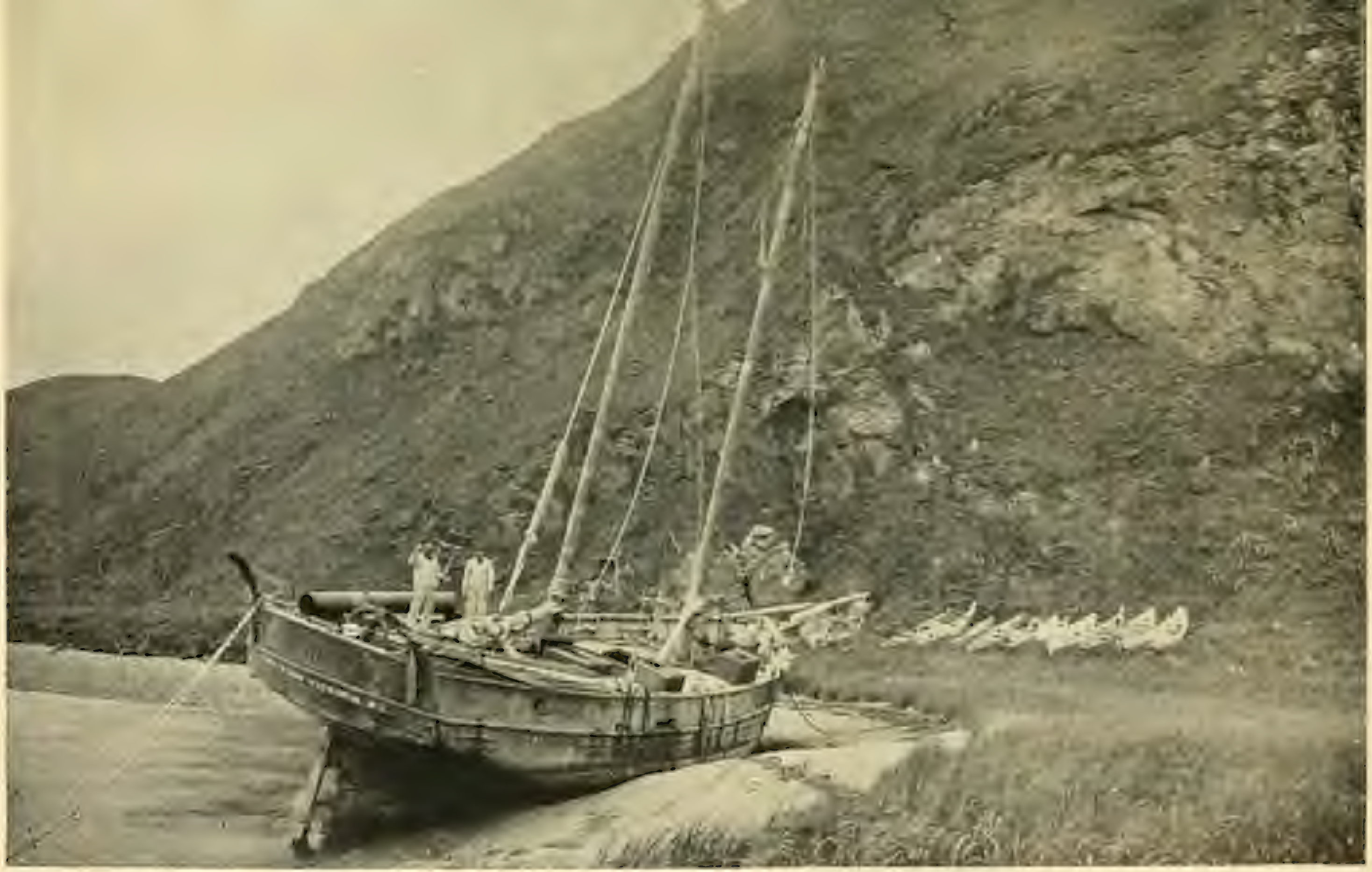


SEALING BOATS STORED AT VICTORIA.



SEALING SCHOONERS SEIZED IN BERING SEA BY UNITED STATES GOVERNMENT IN 1886, AND BEACHED AT UNALASKA.

(Thornton in foreground.)



CANADIAN SEALING SCHOONER THORNTON. SEIZED IN BERING SEA BY UNITED STATES GOVERNMENT AND BEACHED AT UNALASKA.

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